TROMPETER ELECTRONICS INC

# Trompeter

## COAX TRIAX TWINAX

CABLE ASSEMBLIES

PATCHING CONNECTORS

TROMPETER® ELECTRONICS, INC.

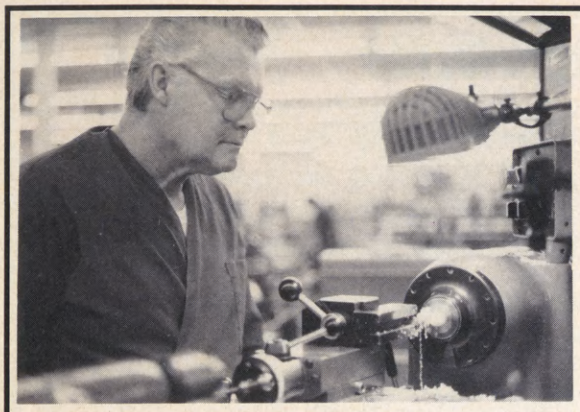
T18 1991

# Interconnection Quality

Founded in 1960, Trompeter Electronics, Inc. has established a reputation for producing quality interconnection system components. We've earned that reputation with innovative designs, quality manufacturing, and engineering support from both our nationwide network of sales representatives and our headquarters in beautiful Westlake Village, California.

The Trompeter name stands for high quality interconnection components for coax, twinax, triax and quadrax applications. Our connectors, patch and switching panels, and our cable assemblies provide for the proper interconnection of equipment from many manufacturers with a minimum of engineering, space and cost. Trompeter components are produced to tolerances that ensure reliable operation in adverse environments.

Look to Trompeter Electronics, Inc. for quality patch panels, patch cords, cable assemblies, jacks, plugs, looping plugs, power dividers, and RF connectors.



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## Trompeter . . . OBSESSION: QUALITY! A Message to the Design Engineer:

Trompeter components meet your most demanding requirements when performance is critical, "compromise" is not an acceptable solution and "cost savings" do little to save the integrity of your design. Mechanically our connectors are the toughest in the industry. We invite you to learn more about our design features by reading the product introductions and the performance, material and finish specifications in our catalog. We have included our technical paper **"Electronic Systems Wiring and Cable"** as an informative resource.

It is unfortunate that military specifications governing the manufacture of connectors do not more fully address many of the pitfalls of improper plating, inferior connector base material and critical contact spring material plating. The military **"Qualified Product List" (QPL) is only a tabulation of products and manufacturers certified to meet minimum specifications standards.** Lax specifications and "low bid" procurement policies will frequently place inferior components in critical applications.

Instead of the QPL, Trompeter military items are supplied under the **ADCP** (Acquisition and Distribution of Commercial Products) program, **DOD Directive No. 5000-37,** dated September 1978. To initiate a **"no substitution"** restriction, insert the numeral **"2" under Item 65** and the letter **"B" under Item 66.**

All Trompeter connectors carry a one-year guarantee and meet or exceed the highest industrial and government standards, such as MIL-C-39012 and MIL-C-49142 which was developed from our commercial parts. More importantly, our connectors are designed to meet your design specifications which are often more demanding. We have built our business on responding to your special needs for uncompromised performance in a world of increased pressure from global competition.

Trompeter hopes that you, the **Design Engineer**, will continue to rely on Trompeter's reputation for quality and look forward to the 1990s with anticipation, pride and, of course, that ever-present **OBSESSION: QUALITY.**

## *ON-TIME OBSESSION!*

### *Introducing ZIP-SHIP Service*

**ZIP-SHIP Service** means that we can **Zip** stock products from our expanded inventory and **Ship** it within 24 hours of receipt of your order.

Hundreds of different stock connectors in this catalog can be on their way—**FedEx, DHL, UPS** or via your routing to meet your tough deadlines.

**Look for this special "ZIP-SHIP" symbol throughout the catalog.**

The symbol tells you that many of our most popular configurations of that component are in stock.
Ask for **ZIP-SHIP Service** when you place your order.

### Non-Stock and Custom Items:

We've expanded our inventory of ready-to-assemble components. Lead time for Non-stock or Custom items has been cut from 12 weeks to 8 weeks or less!

**Trompeter . . . OBSESSION: ON-TIME DELIVERY!**

## *Custom Components*

### *A Trompeter Tradition*

From 1964 to 1966, Trompeter's catalog grew from 78 components to 146 as a result of new and modified designs for unusual applications.

With Trompeter's tradition of **Custom Components** comes our reputation for rugged products that have been modified or specially designed to perform to your expectations and to meet your specific mechanical requirements. The growth of our product line from 78 components in 1964 to 7,000+ end items with over 20,000 configurations in 1991 is proof of our engineering and manufacturing capabilities.

**Why compromise your design when a minor modification might be an affordable solution to your design needs?**

Why settle for less than Trompeter's **OBSESSION for QUALITY** when investing in custom interconnect components for your most demanding applications?

This catalog is your first resource for solving your special interconnect problems. If you cannot find a sufficient solution then we invite you to consult us with your special requirements.

**Trompeter . . . OBSESSION: QUALITY!**

## Telecom Applications

Increased competition has made the elimination of downtime and transmission noise high priorities for the telephone companies. Many of our products were developed specifically for the telecom industry which continues to invest in quality electronic components for reliability and performance.

More and more, the Telecom Industry is turning to Trompeter and our **Obsession** for **Quality**


| BNC Miniature Coax 75Ω Cable Connectors: | Page |
|---|---|
| **75Ω Wrench Crimp, U20 Series** | **25-26** |
| Typically withstands 100-110 lbs. pull! (Mil spec for cable retention is 10-40 lbs. depending on the size of the cable.) Cable actually pulls apart, breaking away the braid before the connector pulls off the cable! | |
| **75Ω Tool Crimp, U220 Series** | **25-26** |
| Typically withstands 70-90 lbs. pull! (Almost double mil spec requirement!) Exceeds MIL-C-39012B, category "D" requirements Accommodates many industry standard cables made by AT&T, Comm/Scope, etc. (AT&T 728, 734A and 735) | |
| See **Coax Connectors—Introduction** for a feature by feature explanation of the benefits of Trompeter's design! | **22-23** |
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| Rugged, dependable DSX modules meet or exceed the highest government and industry standards. Designed for accessing and cross-connecting DS4, DS-4E and DS-3 transmissions. Dimensionally equivalent replacement for the ADC DSX-4M (Rear cross-connect) | |
| **Custom Panels** | **6, 59** |
| Trompeter has manufactured custom distribution panels with BNC connectors for DS3 data transmission rates (45 megabits) which are used in distribution systems related to DSX applications. | |


## Broadcast Applications

After more than 30 years, and even with the advent of highly sophisticated digital switching equipment, Trompeter patching products still provide for the practical, reliable and affordable re-routing of RF and Video signals.

Custom panels with our 75Ω Miniature Patching for **high-density** Low VSWR applications, such as Electronic News Gathering (ENG) and Remote Broadcast vans and trailers, have been developed to meet the industry's current need for quality, high-density RGBS patching.


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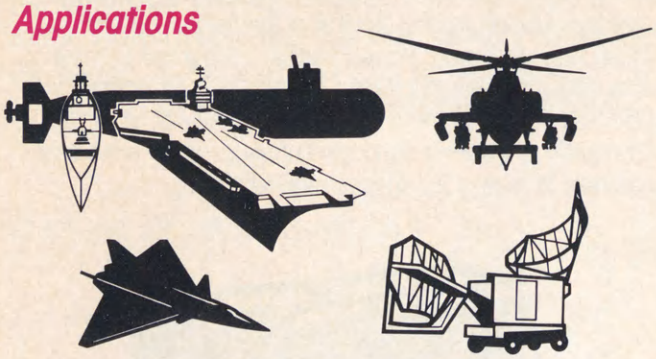
# Military Twinax/Triax

## Applications



Twinax/Triax connectors are used in military applications to protect signals from extraneous noise through non-signal-carrying shielding. Interfacing connectors must provide contact surfaces isolated from each other and from their outer shields.

**MIL-STD-1553B** addresses twinax applications for computerized/multiplexed digital data distribution systems servicing the many functions of **Command, Control, Communications and Intelligence (C31)** which was originally designed for military aircraft.

The great advantages of additional information, automation and weight savings, which are necessary for the complex demands of aircraft operations, are realized by using a single transmission cable instead of the complicated, heavy, dedicated multiple cable previously used. The 78Ω twinax cable was selected to provide the transmitted digital information with the needed protection from magnetic, electro-static and **nuclear electromagnetic pulse (NEMP)** interference. Complete shielding of the twisted pair along the transmission path and of all electrical contacts within multi-pin connectors must be maintained.

Twinax noise reduction is discussed in Appendix A: **"Electronic Wiring Systems and Cable"** Pages 67-75

MIL-STD-1553B applications are found in **naval surface ships, battle tanks, helicopters, missiles, space vehicles, combat aircraft** and in many ground applications such as **data networks** and **perimeter security** for airports, armories, and other government installations.

**Trompeter** provides matching components of Twinax/Twinax connectors and cable for improving the transmission capabilities and interference rejection of data transmission systems.

Trompeter components will meet or exceed **MIL-STD-1553B** requirements for airborne and ground check-out **MIL-STD-1760** "external stores."

## General Military Applications of Trompeter Twinax/Triax Connectors.

For detailed information on the features and benefits of each series see:

**Twinax/Triax Connectors: Introduction Pages 34-35**

| General Application | Page |
|---|---|
| **70 Series: Miniature Twinax/Triax (TRB/TRT)**<br>Used for digital data bus, video pair, airborne MIL-STD-1553B, base-band circuit and other "Noise Free Guarded" circuit applications. Used on larger military aircraft, naval surface ships, and on the Trident submarine. | 37-39 |
| **150 Series: Subminiature Twinax/Triax (TRS/TTM)**<br>Used for digital data bus, video pair and airborne MIL-STD-1553B, base-band circuit and other "Noise Free Guarded" circuit applications. Used on ASW/Patrol, CAS/Attack, Tanker and all types of military aircraft. | 41-43 |
| **70 Series: Concentric Miniature Patching** | 47-48 |
| **150 Series: Concentric Subminiature Patching** | 48-49 |
| Quick disconnect, high density connectors to quickly route/program signals. Used in ground support applications. | |
| **80 Series: Standard Twinax/Triax (TRC/TRN)**<br>Standard "C" sizes concentric connectors. Designed for shipboard data bus MIL-STD-1397 | 36 |
| **30 Series: Miniature Connectors (TWBNC/TWTNC)**<br>2-Pin polarized 2-lug/threaded connectors. Not recommended for new design. Use concentric designs. | 40 |
| **450 Series: Subminiature Twinax**<br>Concentric connectors designed for airborne digital data bus weight reduction applications. Used on CAS/Attack, Stealth, Military transport and all types of military aircraft. | 44-45 |
| **MIL-C-39029-90/91: Twinax Contacts For Digital Data Bus Multi-pin Connector**<br>Mated pair of scoop-proof concentric contacts to fit the #8 cavity in multi-pin connectors such as the MIL-C-38999 Series 1, 3, & 4, and the MIL-STD-1760 "external stores" type. Fully QPL'd | 35 |

## Custom & Standard
### Cable Assemblies

Trompeter Electronics provides cable assemblies made from any Trompeter connector(s) and any **compatible cable** listed on pages 61-65.

Unless otherwise specified cable assemblies will be made with the Trompeter **specification cables** listed on page 60.

**Custom Cable Assemblies** may be ordered using the following format:

**BJ29 / RG223 / PL40 - 36**

(Connector 1 / Cable / Connector 2 - Length in inches)

The **Standard Cable Assemblies** below are included in this catalog. To order use the following format:

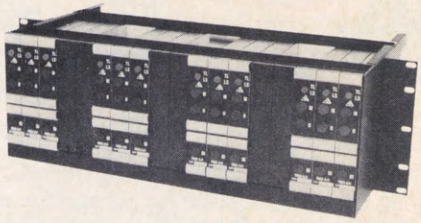
**PCX - L - Z**

(Model Number - Length in inches - Impedance)

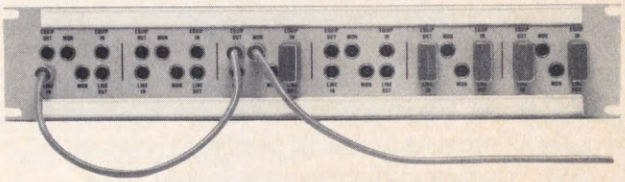
| Connector 1 | Connector 2 | Part # | Page |
|---|---|---|---|
| | **Coax Cable Assemblies** | | |
| PL1C | PL1C | PC | 12 |
| PL93 | PL93 | PCH | 15 |
| PL94 | PL94 | PCHY | 15 |
| PL3C | PL3C | PCM | 17 |
| PL11C | PL11C | PCMW | 19 |
| PL11C | PL50 | PCMWX | 19 |
| PL3C | PL50 | PCMX | 17 |
| PL50 | PL50 | PCMY | 17 |
| PL123 | PL123 | PCP* | 12 |
| PL1WC | PL123 | PCPWX* | 12 |
| PL1C | PL123 | PCPX* | 12 |
| PL1WC | PL1WC | PCW | 12 |
| PL1WC | PL20 | PCWX* | 12 |
| PL1C | PL20 | PCX* | 12 |
| PL20 | PL20 | PCY* | 12 |
| PL220 | PL220 | PCYC* | 12 |
| | *Prefix with "U" for 75Ω connectors | | |
| | **Twinax Cable Assemblies** | | |
| PL71 | PL71 | PTW | 47 |
| PL150 | PL150 | PTWM | 49 |
| PL150 | PL155 | PTWMX | 49 |
| PL155 | PL155 | PTWMY | 49 |
| PL71 | PL75 | PTWX | 47 |
| PL75 | PL75 | PTWY | 47 |
| | **Triax Cable Assemblies** | | |
| PL71 | PL71 | PTR | 47 |
| PL150 | PL150 | PTRM | 49 |
| PL150 | PL155 | PTRMX | 49 |
| PL155 | PL155 | PTRMY | 49 |
| PL71 | PL75 | PTRX | 47 |
| PL75 | PL75 | PTRY | 47 |

## Custom Panels

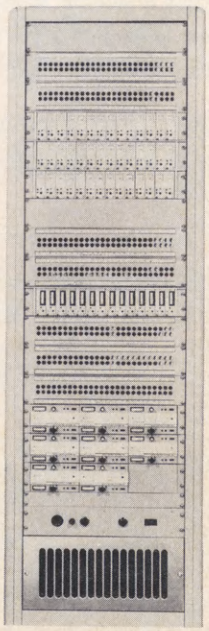
Trompeter Electronics is unique in the field of custom panel manufacturing. Panels can be configured to meet your specifications (including wiring), can be painted any FED-STD-595 color # and/or engraved or silk screened. Trompeter Electronics can also supply custom racks and cabinets to meet your special requirements.



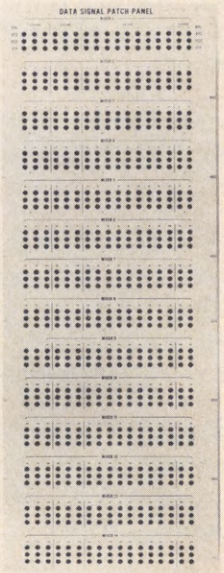
DSX Cross-Connect Module
(See Page 21)



Digital Cross Connect



Telemetry



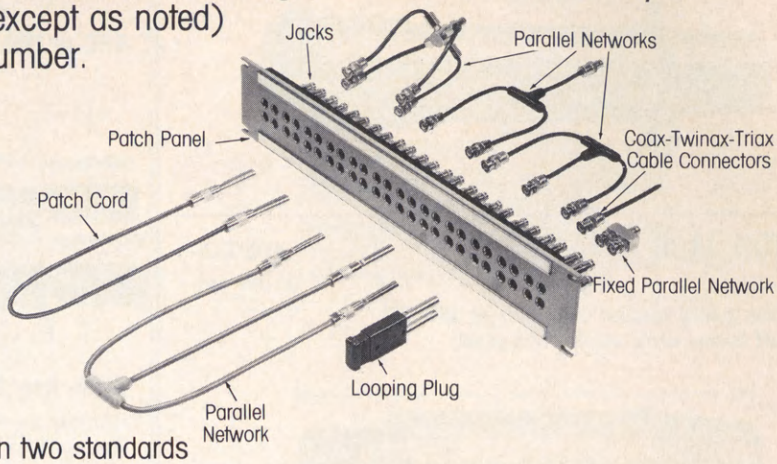

Data Signal

# COAX PATCHING

## Introduction & Standard Patch Jacks

Patching connectors provide maximum flexibility needed to re-route signals and are used in **"shielded cable," video,** and **RF** applications. These jacks may be intermixed on the same panel provided the **mechanical limitations** are recognized. **Microswitches** may be added to all jacks in this series (except as noted) by adding the letter "A" to the part number.

Example: J3 with microswitch = J3A




**Panels:** Pages 54-58

**Cable Distribution Panels:** Page 59

**Custom Cable Assemblies:** Page 6

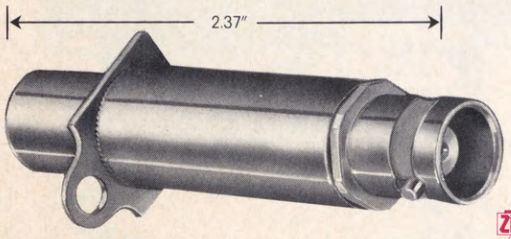
Trompeter patching products are available in two standards with different impedances and center pin contact sizes.

RCA 50Ω - center pin .070"

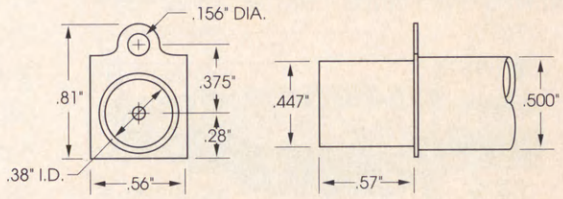
Western Electric 75Ω - center pin .090"

### PATCH JACK
BNC

**J3** RCA
**J3W** WE

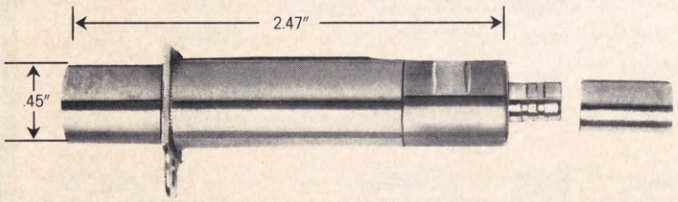



### JACK MOUNTING DETAIL



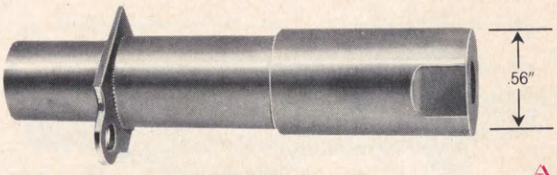

### PATCH JACK*
Crimp

**J3C-△** RCA
**J3WC-△** WE



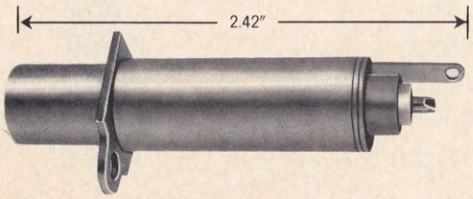

### PATCH JACK*
Cable entry, Field serviceable

**J3E-△** RCA
**J3WE-△** WE



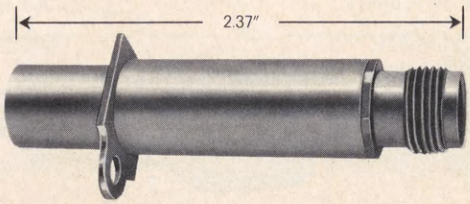

### PATCH JACK
Solder pot

**J3D** RCA
**J3WD** WE




### PATCH JACK
TNC

**J5** RCA
**J5W** WE

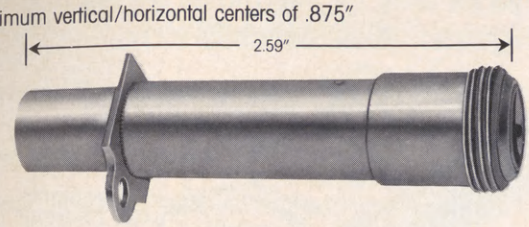



* - Microswitch not available, △- Cable Group # page 33, Panels page 54, Tools page 51

# COAX PATCHING
## Standard Coax Patch Jacks

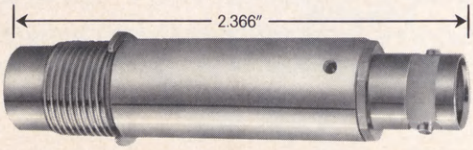
### PATCH JACK
**J9** RCA
**J9W** WE

N
Minimum vertical/horizontal centers of .875″



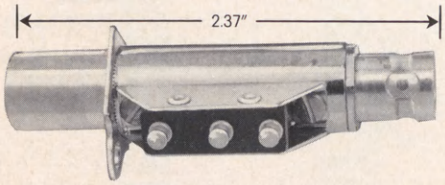

### PATCH JACK
**J10** RCA
**J10W** WE

BNC
Requires special threaded panel. .05-28 UNEF-2A
**Consult factory when ordering with panels.**



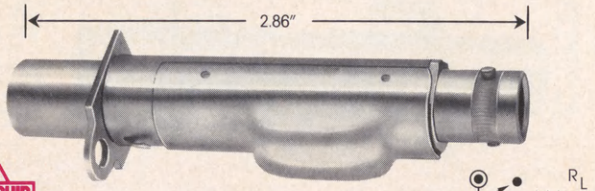

### PATCH JACK
**J3A** RCA
**J3WA** WE

BNC, External SPDT Microswitch
(125-250VAC; 5 amps / 28VDC; 1 amp res., 3 amps ind.)



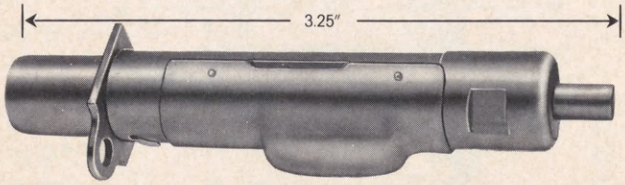

### SELF TERMINATING PATCH JACK
**J13-R** RCA
**J13W-R** WE

BNC
Circuit is terminated when plug is removed.




### SELF TERMINATING PATCH JACK
**J13C-⚠** RCA
**J13WC-⚠** WE

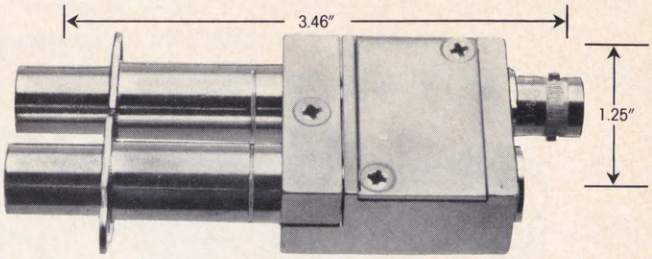
Cable Crimp




### DUAL PATCH JACKS
**J15 Series**

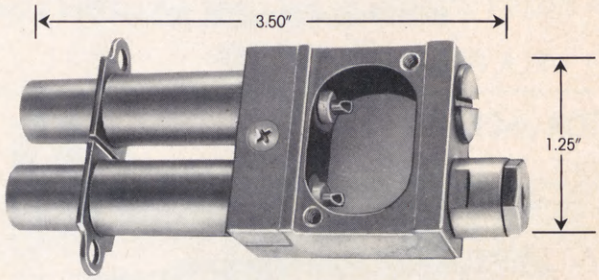
Mounted vertically or horizontally on ⅝″ centers. Mounting tabs are normally back-to-back as shown. For side-by-side tabs for horizontal mounting add the letter "L" for left-hand tabs or "R" for right-hand tabs.

**BNC or TNC Rear Entry**




**Cable Rear Entry**

Normally one rear entry connection.
Provisions for 1 or 2 coax and twinax cables.




| Rear | Entry | Prewired? | | RCA50Ω |
|---|---|---|---|---|
| BNC | Single | Y | **J15B** | RCA |
| BNC | Single | N | **J15BA** | RCA |
| BNC | Dual | Y | **J15BB** | RCA |
| BNC | Dual | N | **J15BBA** | RCA |
| TNC | Single | Y | **J15H** | RCA |
| TNC | Single | N | **J15HA** | RCA |
| TNC | Dual | Y | **J15HH** | RCA |
| TNC | Dual | N | **J15HHA** | RCA |
| Cable | Single | N | **J15-⚠** | RCA |

| Rear | Entry | Prewired? | | WE 75Ω |
|---|---|---|---|---|
| BNC | Single | Y | **J15WB** | WE |
| BNC | Single | N | **J15WBA** | WE |
| BNC | Dual | Y | **J15WBB** | WE |
| BNC | Dual | N | **J15WBBA** | WE |
| TNC | Single | Y | **J15WH** | WE |
| TNC | Single | N | **J15WHA** | WE |
| TNC | Dual | Y | **J15WHH** | WE |
| TNC | Dual | N | **J15WHHA** | WE |
| Cable | Single | N | **J15W-⚠** | WE |

Miniature Coax 75Ω Dual & Quad Jacks page 18

⚠- Cable Group # page 33, **R** - Resistance, Panels page 54, RCA - .070″ pin 50Ω, WE - .090″ pin 75Ω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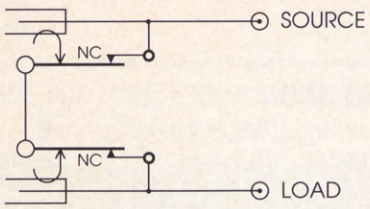
# COAX PATCHING

## Standard Coax Normal-Through Patch Jacks

### NORMAL-THROUGH PATCH JACK J14 Series

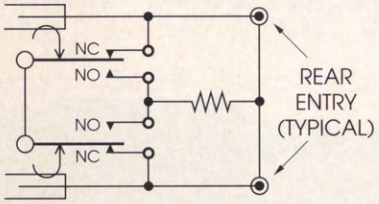
The J14 Series of connectors are dual coax jacks which automatically provide a normal-through signal path without the use of looping plugs or patch cords. The normalizing switch contacts utilize a unique self-wiping action for positive contact.

**Unterminated:**



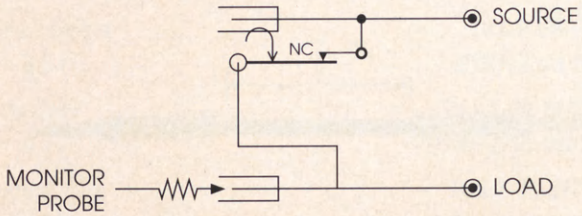

**Terminated:**

Provides a resistive load to the unused side. Plugging into the source side automatically terminates the load side. Inserting a plug into the load side automatically terminates the source side.



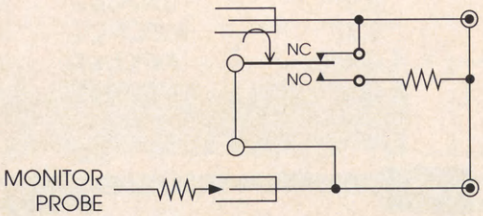

**Monitor:**

Monitors the normal-through signal only. Inserting a plug in the alternate side breaks the normal-through.

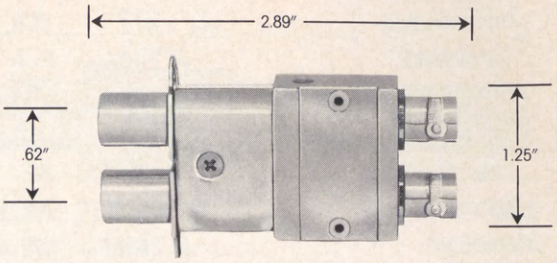



**Monitor-Terminated:**

Plugging into the source side provides a resistive load to the monitored side. Insertion into the load side monitors the normal-through signal.




Mounting tabs are normally back-to-back as shown. To order side-to-side for horizontal mounting add the letter "L" to the part number for left-hand tabs or "R" for right-hand tabs.




ZIP-SHIP TROMPETER

**BNC/TNC Rear Entry**

| | | | |
|---|---|---|---|
| BNC | Unterminated | J14 | RCA |
| BNC | Terminated | J14T-R | RCA |
| BNC | Monitor | J14M | RCA |
| BNC | Monitor-Terminated | J14MT-R | RCA |
| BNC | Unterminated | J14W | WE |
| BNC | Terminated | J14WT-R | WE |
| BNC | Monitor | J14WM | WE |
| BNC | Monitor-Terminated | J14WMT-R | WE |
| TNC | Unterminated | J14H | RCA |
| TNC | Terminated | J14HT-R | RCA |
| TNC | Monitor | J14MH | RCA |
| TNC | Monitor-Terminated | J14MHT-R | RCA |
| TNC | Unterminated | J14WH | WE |
| TNC | Terminated | J14WHT-R | WE |
| TNC | Monitor | J14WMH | WE |
| TNC | Monitor-Terminated | J14WMHT-R | WE |

**Cable Crimp Rear Entry**

| | | |
|---|---|---|
| Unterminated | J14C-⚠ | RCA |
| Terminated | J14CT-R-⚠ | RCA |
| Monitor | J14MC-⚠ | RCA |
| Monitor-Terminated | J14MCT-R-⚠ | RCA |
| Unterminated | J14WC-⚠ | WE |
| Terminated | J14WCT-R-⚠ | WE |
| Monitor | J14WMC-⚠ | WE |
| Monitor-Terminated | J14WMCT-R-⚠ | WE |

Panels pages 54-57

⚠- Cable Group # page 33, **R** - Resistance (.5 W 2%), Tools page 51, RCA - .070" pin 50Ω, WE - .090" pin 75Ω

# COAX PATCHING

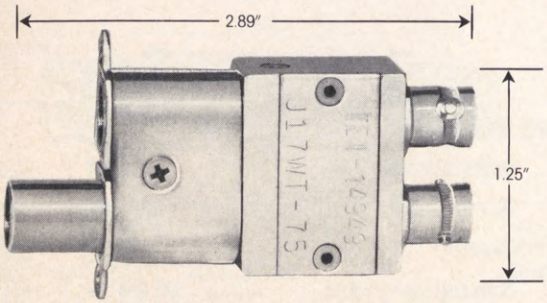
## Standard Coax Patch Jacks & Audio Patching

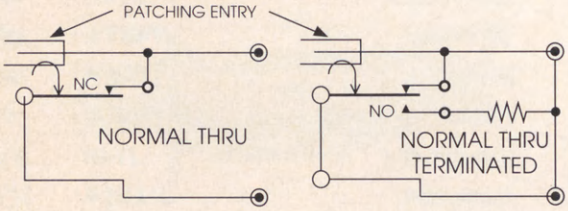
### NORMAL-THROUGH PATCH JACK — J17 Series

Single Leg

Features are the same as the J14 Series. Page 9
Mount in JSN / JSIN-20 panels only. Call factory.

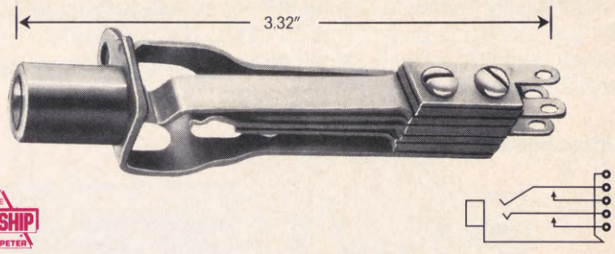
| Rear | Configuration | | |
|---|---|---|---|
| BNC | Unterminated | J17 | RCA |
| BNC | Terminated | J17T-R | RCA |
| TNC | Standard | J17H | RCA |
| TNC | Terminated | J17TH-R | RCA |
| BNC | Unterminated | J17W | WE |
| BNC | Terminated | J17WT-R | WE |
| TNC | Standard | J17WH | WE |
| TNC | Terminated | J17TH-R | WE |



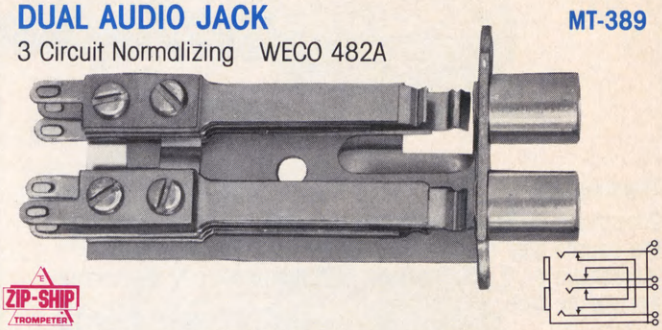

### AUDIO JACK — M641/3-2

3 Circuit Normalizing JJ042



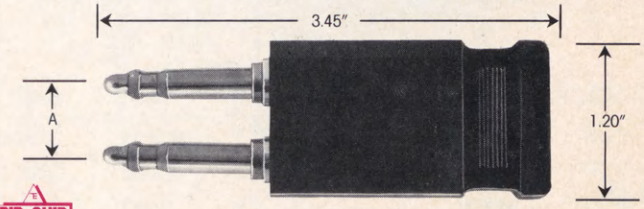

### DUAL AUDIO JACK — MT-389

3 Circuit Normalizing WECO 482A



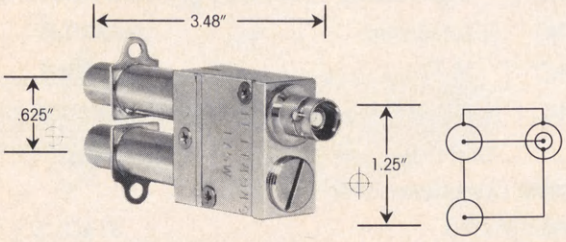
### AUDIO LOOPING PLUG — A = .625" ALP3, A = 1.000" ALPL3

3 Circuit



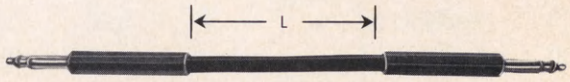

### TWINAX/TRIAX ADAPTER JACK — J75W WE

Tip-Tip patch jack to concentric TRB series



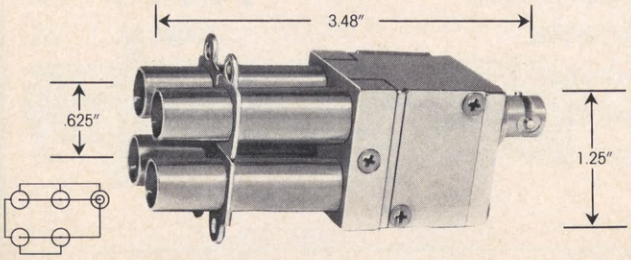

### AUDIO PATCHCORD — APC3-L

3 Circuit



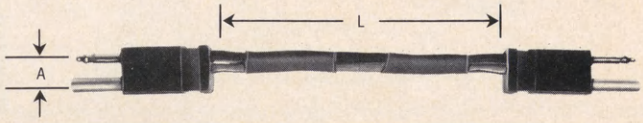

### TWINAX/TRIAX ADAPTER DUAL JACK — J76W WE

Tip-Tip patch jack to concentric TRB series




### AUDIO VIDEO PATCH CORD

| Handle | A | | |
|---|---|---|---|
| Green | .625" | AVPC-L-Z | RCA |
| Green | .625" | AVPCW-L-Z | RCA |
| Violet | 1.000" | AVPCL-L-Z | WE |
| Violet | 1.000" | AVPCLW-L-Z | WE |




**L** - Length in inches, **R** - Resistance (.5 W 2%), **Z** - Cable Impedance, Panels page 54, RCA - .070" pin 50Ω, WE - .090" pin 75Ω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# COAX PATCHING

## Standard Coax Patch Plugs

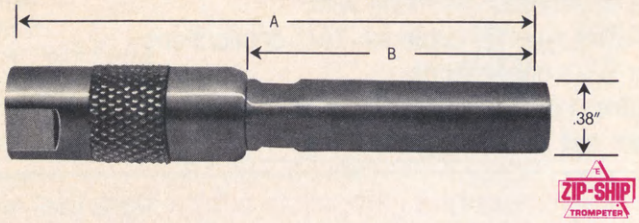


### PATCH PLUG

Shield Crimp

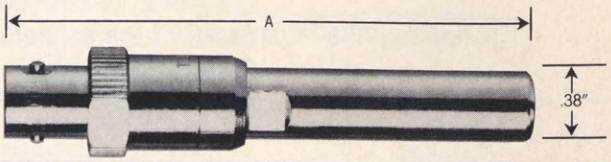
Bend relief page 20 △- Cable Group # page 33

| | | | |
|---|---|---|---|
| A = 2.73″ | B = 1.50″ | PL1C-△ | RCA |
| A = 2.45″ | B = 1.29″ | PL1WC-△ | WE |



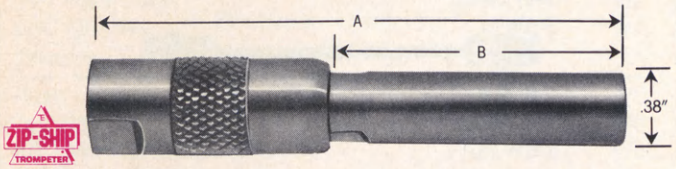

### ADAPTER — PATCH PLUG TO BNC/TNC

| | | | | |
|---|---|---|---|---|
| 50Ω | BNC | A = 2.77″ | AD1 | RCA |
| 50Ω | TNC | A = 2.77″ | ADH1 | RCA |
| 75Ω | BNC | A = 2.83″ | AD1W | WE |
| 75Ω | TNC | A = 2.83″ | ADH1W | WE |




### PATCH PLUG — CABLE ENTRY, FIELD SERVICEABLE

| | | | | |
|---|---|---|---|---|
| RG58 | A = 2.80″ | B = 1.56″ | PL1 | RCA |
| RG59 | A = 2.80″ | B = 1.56″ | PL2 | RCA |
| RG58 | A = 2.52″ | B = 1.29″ | PL1W | WE |
| RG59 | A = 2.52″ | B = 1.29″ | PL2W | WE |

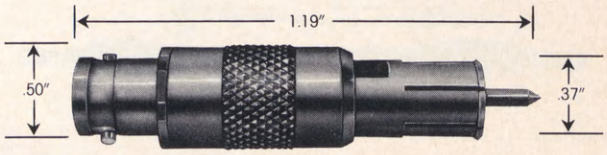



### PROBE PLUG

BNC rear access

Monitors J14 without interrupting normal-through signal.

| | |
|---|---|
| MP4 | RCA |
| MP4W | WE |

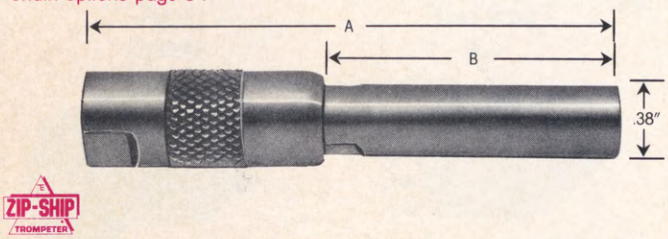



### TERMINATION PLUG

No chain

Chain options page 34

| | | | |
|---|---|---|---|
| A = 2.73″ | B = 1.50″ | TP-1-R | RCA |
| A = 2.50″ | B = 1.23″ | TPW-1-R | WE |

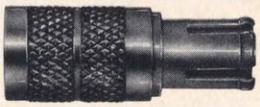



### RFI PATCH PLUG CAP

No chain.

Chain options page 32

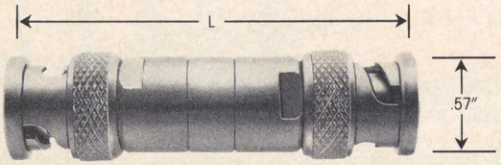
| | |
|---|---|
| RF120-1 | RCA |



### BNC ATTENUATOR

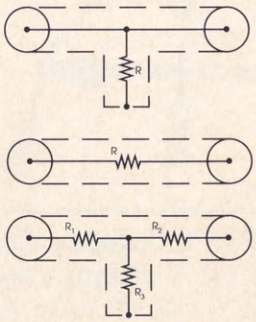
| | |
|---|---|
| Male/Female | TNA-Z-dB-BNC |
| L = 3.24″ | UTNA-Z-dB-BNC |
| Male Only | TNA-Z-dB-BNC/M |
| L = 3.17″ | UTNA-Z-dB-BNC/M |
| Female Only | TNA-Z-dB-BNC/F |
| L = 3.30″ | UTNA-Z-dB-BNC/F |

Video frequency max. 10MHz, Attenuation 20dB max.

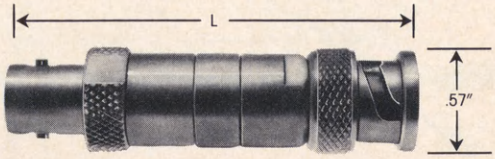



### BNC PADS

**Schematic**




| L | |
|---|---|
| 2.16″ | TNA2-R 50Ω |
| | UTNA2-R 75Ω |
| 2.16″ | TNA3-R 50Ω |
| | UTNA3-R 75Ω |
| 3.23″ | TNA4-R 50Ω |
| | UTNA4-R 75Ω |




**dB** - Attenuation, **R** - Resistance (.5 W 2%), **Z** - Impedance, Panels page 54, RCA - .070″ pin 50Ω, WE - .090″ pin 75Ω

# COAX PATCHING

## Standard Coax Patch Cords & Cable Assemblies

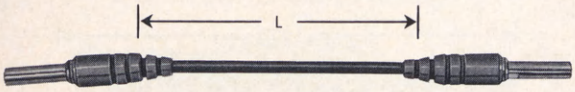
### Trompeter's coax patch cords and cable assemblies

are of the highest quality and come in standard lengths of **6", 12", 18", 24",** and **36".**
Standard patch cords and cable assemblies are made with:
RG58 type TEI cable for 50Ω applications • RG59 type TEI cable for 75Ω applications
RG62 type TEI cable for 93Ω applications
**Z denotes the impedance of the connecting cable,** not the impedance of the plug or jack.
**50Ω & 75Ω patch cords are not interchangeable**

**Custom Cable Assemblies** made from Trompeter connectors and compatible cables, Page 6

### PATCH CORD
**PC-L-Z** RCA
**PCW-L-Z** WE

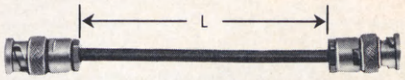
Patch plug to patch plug




ZIP-SHIP TROMPETER

### CABLE ASSEMBLY
**PCY-L-Z**
**UPCY-L-Z**

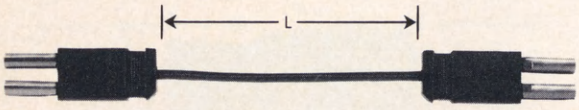
Plug to Plug
BNC**




ZIP-SHIP TROMPETER

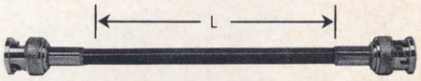
### TIP-TIP PATCH CORD
**PTWD-L-Z*** WE

Z* - 78Ω and 124 only



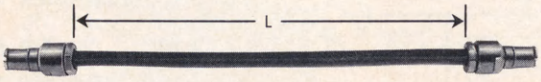

### CABLE ASSEMBLY
**PCYC-L-Z** RCA
**UPCYC-L-Z** WE

Tool Crimp plug to plug
BNC**



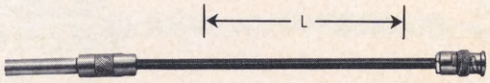

### CABLE ASSEMBLY
**PCP-L-Z**
**UPCP-L-Z**

Push-on plug to push-on plug
BNC/TNC**




### CABLE ASSEMBLY
**PCX-L-Z**
**UPCX-L-Z**

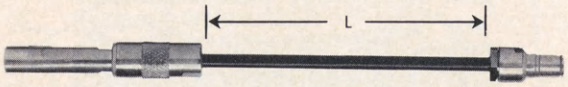
Patch plug to plug
BNC**



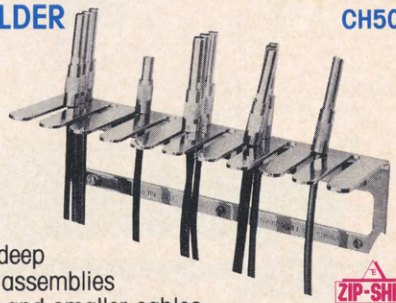

ZIP-SHIP TROMPETER

### CABLE ASSEMBLY
**PCPX-L-Z** RCA
**PCPWX-L-Z** WE

Patch plug to push-on plug
BNC/TNC**




### PATCH CORD HOLDER
**CH50**



Wall mount
Black epoxy over steel
10.75" wide x 4.50" deep
Holds up to 50 cable assemblies
For use with .75" dia. and smaller cables

ZIP-SHIP TROMPETER

BNC/TNC** - for 75Ω prefix **"U"**, **L** - Length in inches, **Z** - Cable Impedance, RCA - .070" pin 50Ω, WE - .090" pin 75Ω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# COAX PATCHING

## Standard Coax Looping Plugs and Paralleling

### LOOPING PLUGS

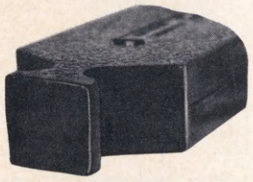
ZIP-SHIP TROMPETER

| | | | |
|---|---|---|---|
| **Handle:** | B = 1.51″ | C = .625″ | D = 1.20″ |
| Plain | | **LP-Z** | RCA |
| Pinch | | **LPP-Z** | RCA |
| Test Point Single | | **LPTP-Z** | RCA |
| Test Point Dual | | **LP2TP-Z** | RCA |
| BNC Monitor | | **LPA-Z** | RCA |
| **Handle:** | B = 1.51″ | C = 1.00″ | D = 1.57″ |
| Plain | | **LPL-Z** | RCA |
| Test Point Single | | **LPLTP-Z** | RCA |
| BNC Monitor | | **LPLA-Z** | RCA |
| **Handle:** | B = 1.25″ | C = .625″ | D = 1.20″ |
| Plain | | **LPW-Z** | WE |
| Pinch | | **LPPW-Z** | WE |
| Test Point Single | | **LPWTP-Z** | WE |
| Test Point Dual | | **LPW2TP-Z** | WE |
| BNC Monitor | | **LPWA-Z** | WE |
| **Handle:** | B = 1.25″ | C = 1.00″ | D = 1.57″ |
| Plain | | **LPLW-Z** | WE |
| Test Point Single | | **LPLWTP-Z** | WE |
| BNC Monitor | | **LPLWA-Z** | WE |

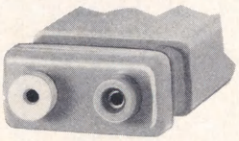
**Handles are color coded**

**Green = 50Ω** **Violet = 75Ω** **White = 93Ω**

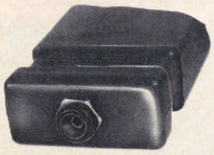
**Pinch Handle**



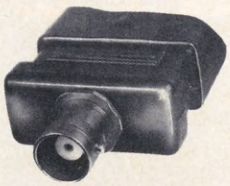
**Test Point Dual**



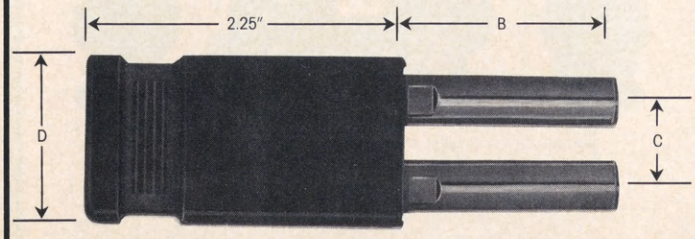
**Test Point Monitor**



**BNC Monitor**



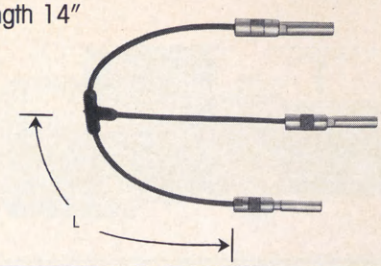
**Plain Handle**




### TRIPLE PARALLELING PATCH CORD

**PCS-L-Z** RCA
**PCWS-L-Z*** WE

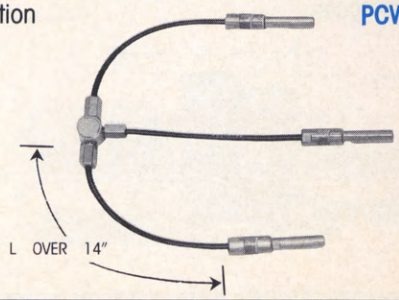
Molded Junction
Maximum length 14″




### TRIPLE PARALLELING PATCH CORD

**PCSE-L-Z** RCA
**PCWSE-L-Z** WE

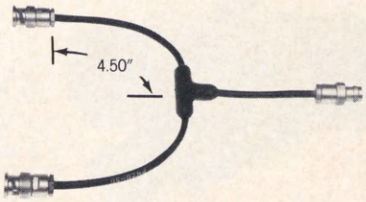
Metal Junction
Any Length




### BNC STANDARD RANDOM PARALLELING

Two plugs, One Jack

Molded Junction **PN2B-Z***
Metal Junction **PN2BE-Z**




### BNC STANDARD RANDOM PARALLELING

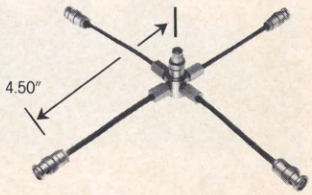
Three plugs, No Jack

Molded Junction **PN3-Z***
Metal Junction **PN3E-Z**

### BNC STANDARD RANDOM PARALLELING

**PN4-Z**

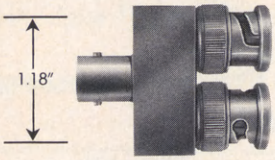
Metal Junction
Four plugs, One Jack



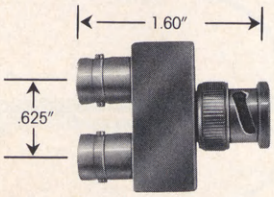

**L** - Length in inches, **Z*** - Cable Impedance 50Ω or 75Ω only, **Z** - 50Ω, 75Ω & 93Ω, RCA - .070″ pin 50Ω, WE - .090″ pin 75Ω

# COAX PATCHING
## Standard Coax Paralleling

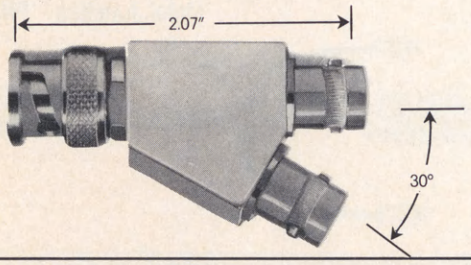
### BNC FIXED PARALLELING — PN2
One jack, Two plugs



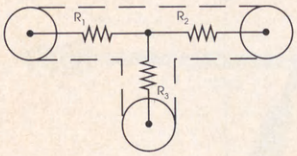

### BNC FIXED PARALLELING — PN2A
Two jacks, One plug

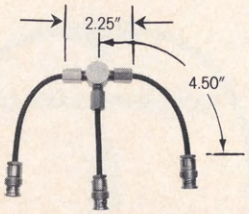



### BNC FIXED PARALLELING — PN2C
Two jacks, One plug (For two-row panels)

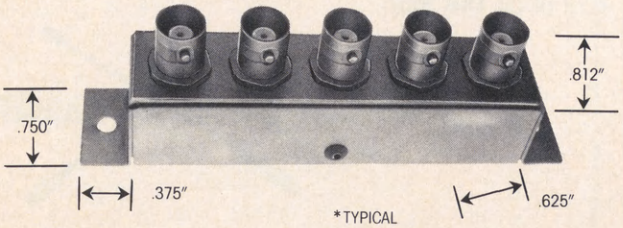



### BNC POWER DIVIDER — PD3-Z*
Maximum 10 MHz, Z*-50Ω, 75Ω & 93Ω




### MULTIPLE PARALLEL NETWORK
BNC MPN-△/BNC
TNC MPN-△/TNC

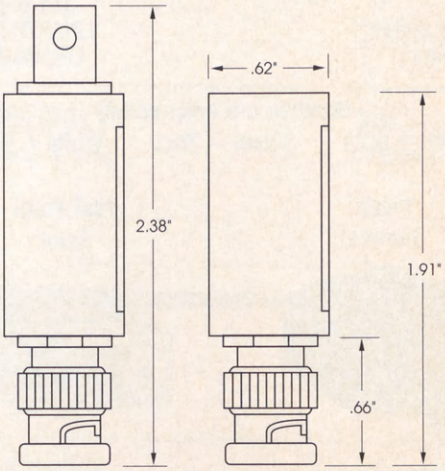


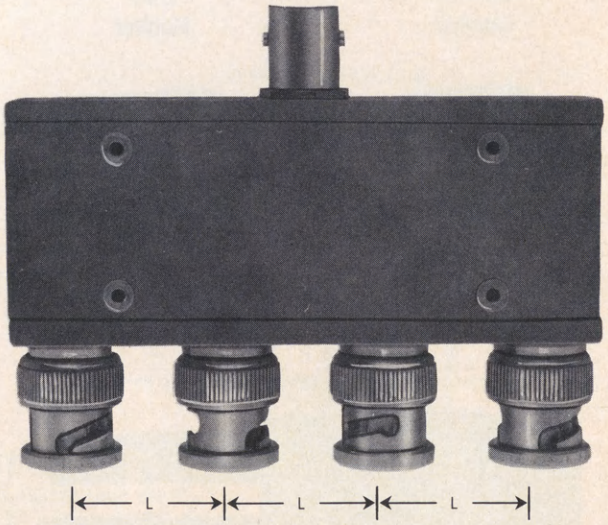

*TYPICAL

### BNC FIXED PARALLELING

| "L" | One Input | No Input |
|---|---|---|
| 0.625" | PNS-B△ | PNSX-B△ |
| 0.750" | PNS-C△ | PNSX-C△ |
| 0.830" | PNS-D△ | PNSX-D△ |
| 0.875" | PNS-E△ | PNSX-E△ |
| 1.125" | PNS-F△ | PNSX-F△ |
| 1.125" | PNS-G△ | PNSX-G△ |
| 1.210" | PNS-H△ | PNSX-H△ |
| 1.251" | PNS-J△ | PNSX-J△ |
| 1.430" | PNS-K△ | PNSX-K△ |

△ = Number of Connectors





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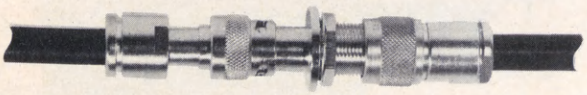
# COAX PATCHING

## Standard Coax Low VSWR Patching 50Ω

### TYPICAL LOW VSWR ASSEMBLY

**Patch Plug** **Patch Jack** **"N" Connector**



Trompeter's 50Ω low VSWR (1.11:1.0) patching system has been developed for use at frequencies up to 3GHz and at power levels up to 500 watts.

J94 jack accepts a "N" male connector in back and the PL93-⚠ or PL94-⚠ in the front of the panels shown or a custom panel of your own design.

Patch plugs incorporate a push-fit design that snaps into position in the jack and are available with or without a bayonet locking feature.

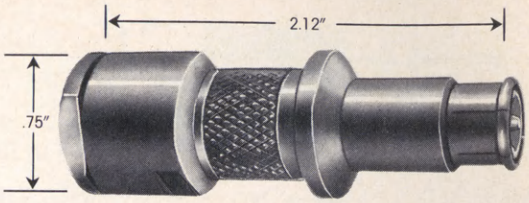
Normal jack spacing is 3" center at center.

For a minimum band radius when patching adjacent jacks, use Trompeter standard patch cords made with RGB cable with a minimum length of 14". Otherwise the minimum length is 18".

**Factory loaded panels at no additional cost!**
**See page 54**

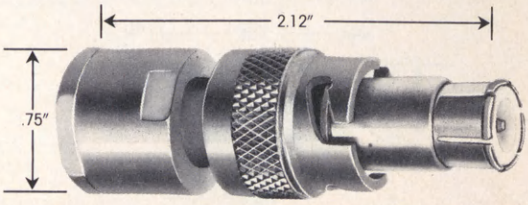
### PATCH PLUG — PL93-⚠ 50Ω

Without locking sleeve



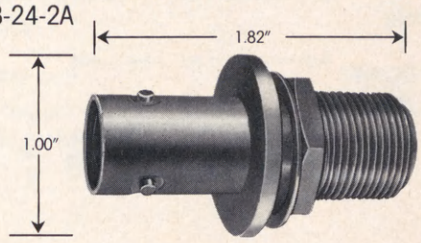

### PATCH PLUG — PL94-⚠ 50Ω

With locking sleeve




### PATCH JACK TO "N" JACK — J94 50Ω

Threaded .63-24-2A

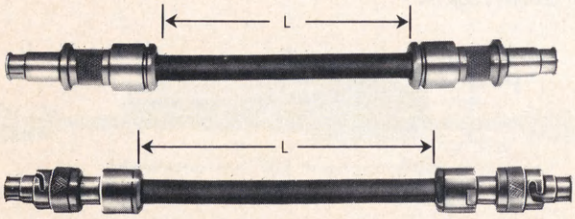



CC1.312*

ZIP-SHIP TROMPETER

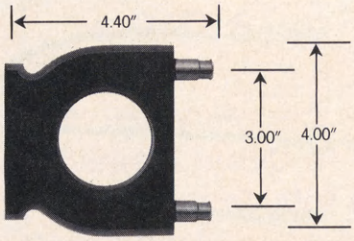
### PATCH CORDS

PL93 **PCH-L-50** 50Ω
PL94 **PCHY-L-50** 50Ω



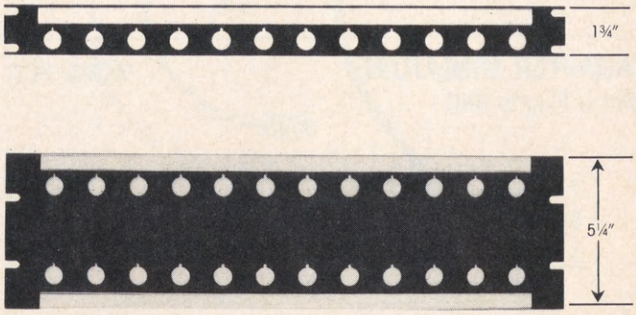

### LOOPING PLUG — LPH-50 50Ω

Green handle




### PANELS FOR J94

| | |
|---|---|
| 12 hole, open notch, aluminum | **JSH-12** |
| 12 hole, closed notch, insulated | **JSHI-12** |
| 24 hole, open notch, aluminum | **JSH-24** |
| 24 hole, closed notch, insulated | **JSHI-24** |



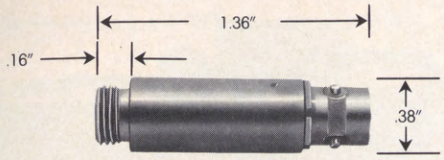

* - Mounting Holes page 58

# COAX PATCHING

## Miniature Coax Patch Jacks & Plugs 50Ω

### MINIATURE PATCH JACK — J8 50Ω

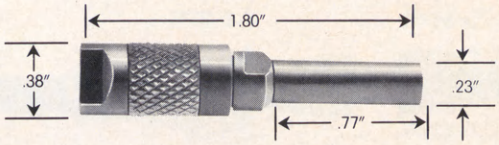
TPS Female, Threaded panel mounting .312-32-2A




ZIP-SHIP TROMPETER

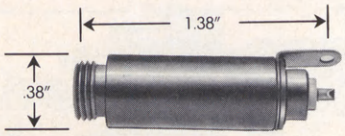
### MINIATURE PATCH PLUG — PL3-⚠ 50Ω

Cable entry (Group 4 only), Field Serviceable



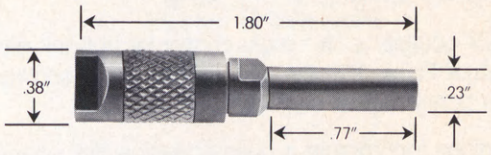

### MINIATURE PATCH JACK — J8D 50Ω

Solder pot



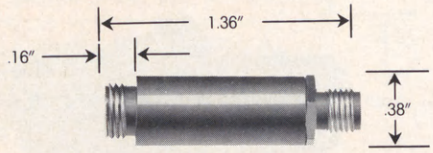

### MINIATURE PATCH PLUG — PL3C-⚠ 50Ω

Shield Crimp




### MINIATURE PATCH JACK — J308 50Ω

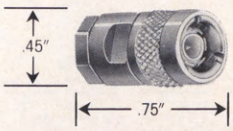
TCM Female




### CABLE PLUG

Wrench Crimp

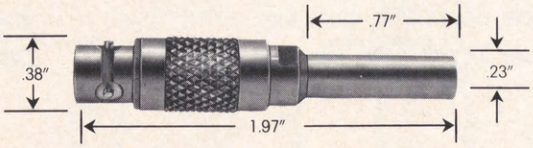
TPS 3-lug **PL50-⚠ 50Ω**
TCM Threaded **PL350-⚠ 50Ω**




ZIP-SHIP TROMPETER

### ADAPTER MINIATURE — ADM1 50Ω

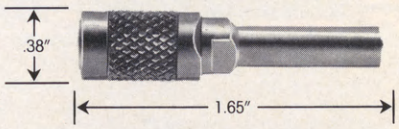
Patch Plug to TPS




### MINIATURE RFI JACK CAP — RFI50-1 50Ω

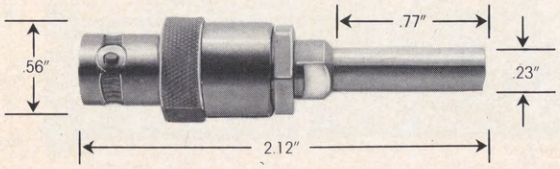
No chain

Chain options page 34




### ADAPTER MINIATURE — ADM2 50Ω

Patch Plug to BNC




ZIP-SHIP TROMPETER

**Additional Terminations & RFI Caps Page 32**

**Custom Patch Cords & Cable Assemblies made with Trompeter components Page 6**

⚠- Cable Group # page 33, Panels page 51



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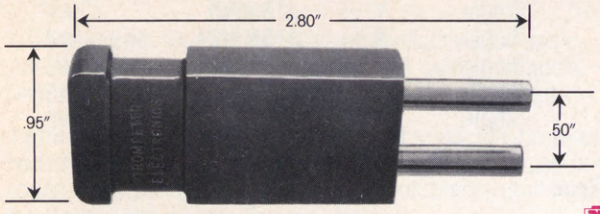
# COAX PATCHING

## Miniature Coax Patching Accessories 50Ω

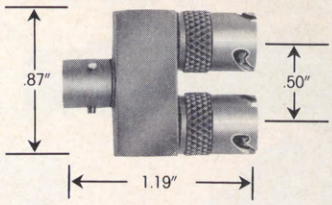
### MINIATURE LOOPING PLUG — LPM-Z 50Ω

Handle color: Green = 50Ω Violet = 75Ω White = 93Ω



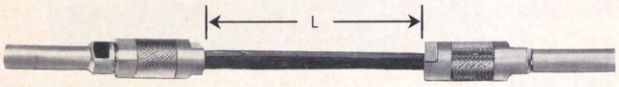

### TPS FIXED PARALLELING — PNM2 50Ω

One jack, Two plugs




### MINIATURE PATCH CORD — PCM-L-Z 50Ω

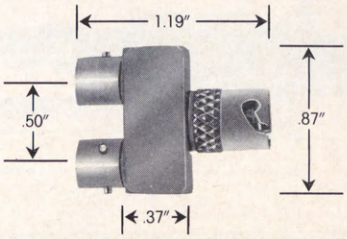
Miniature patch plugs




### TPS FIXED PARALLELING — PNM2A 50Ω

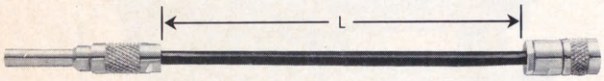
Two jacks, One plug

For JS-32, JSI-32, JS-96B, and JSI96B panels only




### CABLE ASSEMBLY — PCMX-L-Z 50Ω

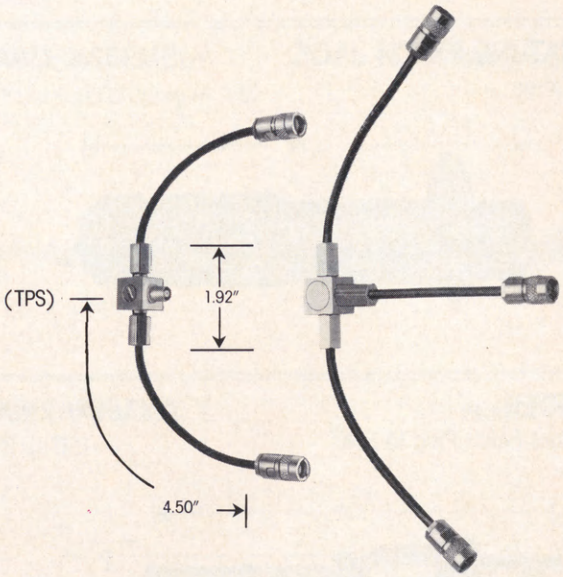
Miniature patch plug to TPS plug




### MINIATURE RANDOM PARALLELING

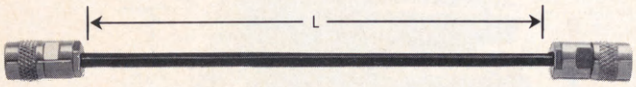
TPS plugs/jacks

| | |
|---|---|
| Two plugs, One jack | PNM2B-Z 50Ω |
| Three plugs, No jacks | PNM3-Z 50Ω |
| Four plugs, No jacks | PNM4-Z 50Ω |



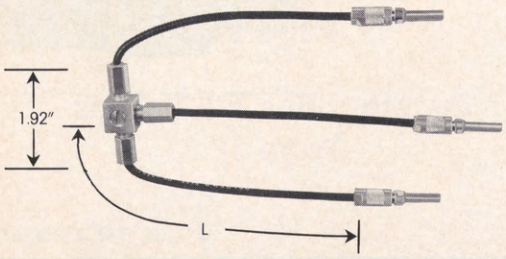

### CABLE ASSEMBLY — PCMY-L-Z 50Ω

TPS plug to TPS plug




### TRIPLE PARALLEL PATCH CORD — PCSM3-L-Z 50Ω

Miniature patch plugs



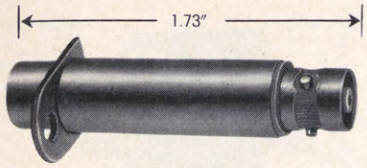

**L** - Length in inches, **Z** - Cable Impedance 50, 75 & 93Ω, Panels page 57

# COAX PATCHING

## Western Electric Miniature Coax Patch Jacks 75Ω

### MINIATURE PATCH JACK — J11 WE

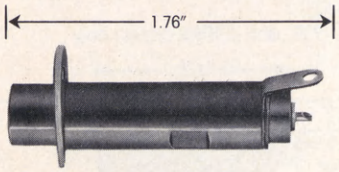
TPS




ZIP-SHIP TROMPETER

### MINIATURE PATCH JACK — J11D WE

Solder pot

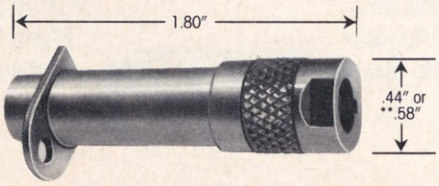



ZIP-SHIP TROMPETER

### MINIATURE PATCH JACK — J12-⚠ WE

Cable entry, Field serviceable

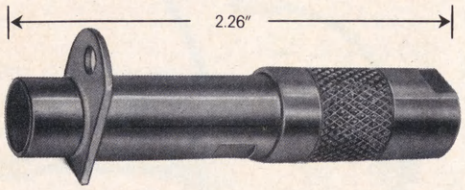
Replacement for WE 560A  Minimum .64″ centers




ZIP-SHIP TROMPETER

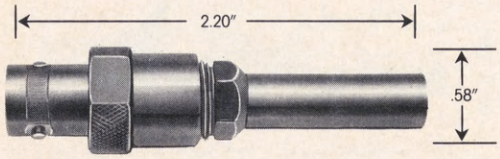
### MINIATURE PATCH JACK — J12C-⚠ WE

Tool Crimp




### ADAPTER — ADMW12 WE

Miniature Patch Plug to BNC

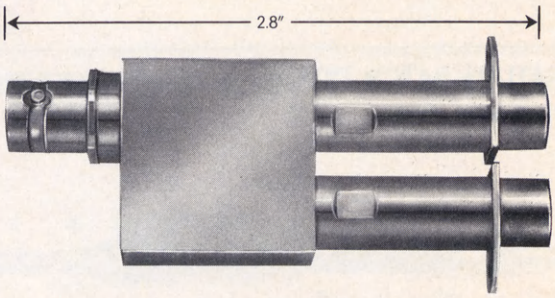



ZIP-SHIP TROMPETER

### DUAL MINIATURE PATCH JACK — J15W Series

| Entry | Type | Prewired? | | |
|---|---|---|---|---|
| BNC | Single | Y | J15MWB | WE |
| BNC | Single | N | J15MWBA | WE |
| TPS | Single | Y | J15MWTPS | WE |
| TPS | Single | N | J15MWTPSA | WE |
| Cable | Single | N | J15MW-⚠ | WE |

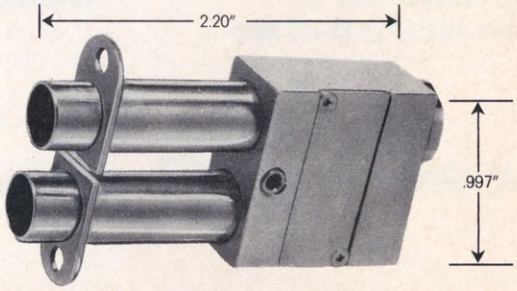
**BNC Type**




**Cable Entry**

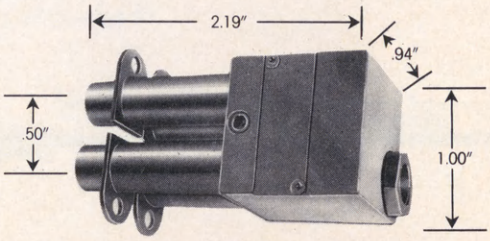
Normally one rear entry connection.

Provisions for one or two coax/twinax cables.




### QUAD MINIATURE PATCH JACK — J16MW-⚠ WE

Cable rear entry




**TPS Cable Plugs**
**Page 31**

**Terminations & RFI Caps**
**Page 32**

⚠- Cable Group # page 33, Panels page 58



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# Western Electric Miniature Coax Patching 75Ω

## NORMAL-THROUGH PATCH JACK — J18 Series

**TPS Rear Connection** — **J18**

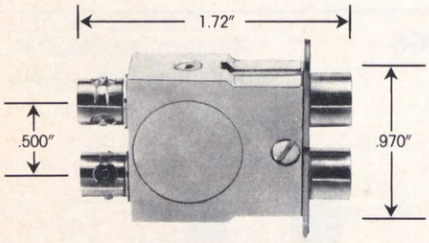
**Unterminated:** Dual coax jack automatically provides a normal-through signal path. Normalling switch contacts utilize a unique self-wiping action for positive contact.

**Terminated Version:** Plug insertion automatically provides a resistive load to the unused side. Patched out sources and loads are automatically switched "break before make" and terminated into a specified resistance.

**Monitor, Monitor-Terminated and Crimp versions are available. Call factory.**

Mounting tabs are normally back-to-back. For side-to-side tabs for horizontal mounting add the letter "L" to the part number for left-hand tabs or "R" for right-hand tabs.

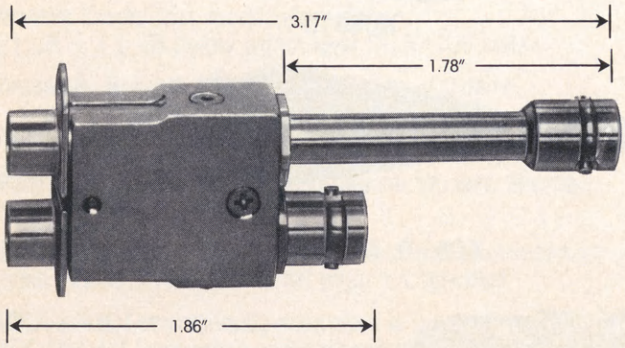
| | | | |
|---|---|---|---|
| Unterminated | TPS | **J18** | WE |
| Terminated | TPS | **J18T-R** | WE |
| Unterminated | TCM | **J318** | WE |
| Terminated | TCM | **J318T-R** | WE |




## BNC/TNC Rear Connection — J18B

Dual Video Jack
Consult factory for versions for serial digital applications.

| | | | |
|---|---|---|---|
| Unterminated | BNC | **J18B** | WE |
| Terminated | BNC | **J18BT-R** | WE |

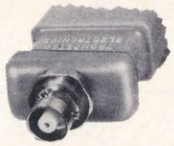



For Schematics see page 9.

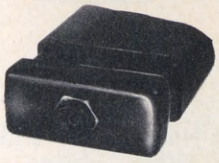
## MINIATURE LOOPING PLUGS — 75Ω

| Handle | A | | |
|---|---|---|---|
| Plain | 2.95" | **LPMW-Z** | WE |
| Plain | 2.21" | **LPMWS-Z** | WE |
| Test Point Monitor | 2.95" | **LPMWTP-Z** | WE |
| TPS Monitor | 2.95" | **LPMWA-Z** | WE |

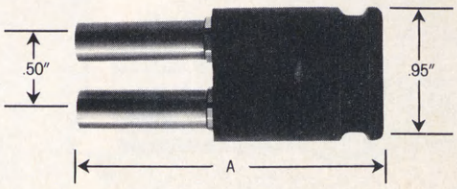
**TPS Monitor**



**Test Point Monitor**

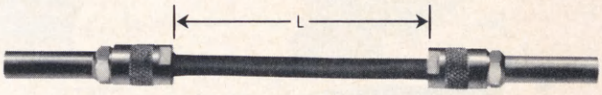


**Plain Handle**



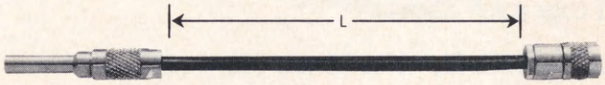

## MINIATURE PATCH CORD — PCMW-L-Z WE

Miniature patch plugs



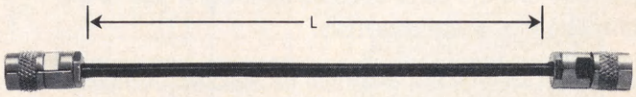

## CABLE ASSEMBLY — PCMWX-L-Z WE

Miniature patch plug to TPS




## CABLE ASSEMBLY — PCMY-L-Z WE

TPS to TPS



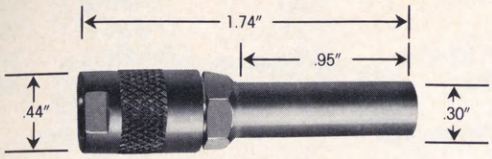

**L** - Length in inches, **R** - Resistance 50Ω, 75Ω & 93Ω (.5 W 2%), **Z** - Cable Impedance, Panels page 58

# COAX PATCHING

## Western Electric Miniature Coax Patch Jacks 75Ω, Bend Relief Springs/Boots

### MINIATURE PATCH PLUG — PL11-⚠ WE

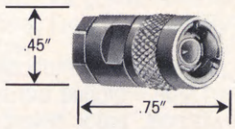
Recommended for use on panels with a minimum of .62″ between centers.




### CABLE PLUG — PL50-⚠

Wrench Crimp

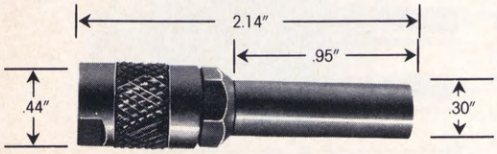
Mates with J11, J15 and J18 jacks.




### MINIATURE PATCH PLUG — PL11C-⚠ WE

Crimp (WE440)

Recommended for use on panels with a minimum of .62″ between centers.

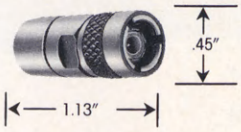



*-.58″ dia. for cable grps 015, 016, and 020

### TERMINATION — TNB1-1-R

TPS, No chain

Chain versions page 34

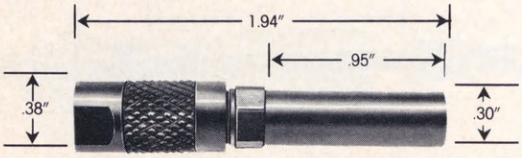



### TERMINATION — TPMW-1-R WE

Miniature patch plug

No chain

Chain versions page 34




### HOLE PLUGS

| | | |
|---|---|---|
| Miniature jacks | .304″ | HP304 |
| Miniature panels | .358″ | HP358 |

Panels page 54

### BEND RELIEF Boots/Springs: minimize cable damage when exceeding the cable's minimum bend radius.

Bend relief boots are made of tough 105° PVC and are standard on the patch plug connectors on the following 75Ω coax patch cords:

PC-L-75, PCW-L-75, PCX-L-75 and PCWX-L-75.

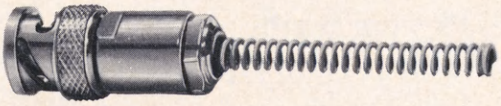
Bend relief boots are available for specific Trompeter connectors, patch cords and cable assemblies and may be assembled to the cable/connector using 3M ScotchGrip™ No. 1099 plastic adhesive or equivalent.

ACB013-7

ACA1-0, ACA2-0, ACA5-0

Bend Relief Springs are made from plastic-coated tempered steel wire and are assembled as an integral part of the connector clamp nut assembly.

Bend relief springs are available for specific Trompeter connectors, patch cords and cable assemblies.



See Connector Compatibility Tables on page 33 and contact the factory for availability.

⚠- Cable Group # page 33, **R** - Resistance 50Ω, 75Ω & 93Ω (1/2 W 2%)



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# COAX PATCHING

## DSX Cross-Connect Module

### DESIGN FEATURES:

Tracer lamp front and rear of module

180° tracer lamp on front

Interchangeable with ADC's DSX-4M

50M gold-plated contacts

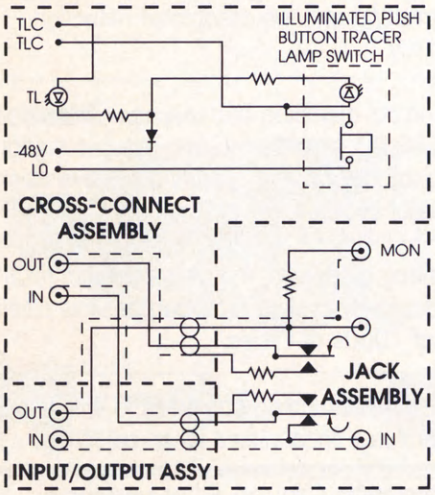
Contacts designed with wiping action

Module enclosed on all sides

**19" and 23" chassis available**

Extended bandwith: 400 MHz performance

**Circuit Schematic**




### TRANSMISSION CHARACTERS

**Insertion Loss:** 0.3 dB typical
Less than 1 dB, DC through 400 MHz all ports

**Return Loss:** 22dB typical
Greater than 25 dB, DC through 175 MHz
Greater than 20 dB, DC through 400 MHZ

**Monitor Level:** 75Ω monitor termination
21 dB ± 1.5 dB below signal level DC to 400 MHz

**Crosstalk:** Better than 60 dB isolation to 400 MHz

### INTERFACE CHARACTERISTICS

**Patch Plugs (Front):** Patch jacks require Western Electric type Miniature 75Ω plugs

**Mating Connectors (Rear):** Input/output and cross-connect jacks require 75Ω BNC or TNC plugs as specified

**TDSX-3/4H:** Dimensionally equivalent to and can replace the ADC DSX-4M (rear cross-connect) in the ADC chassis.

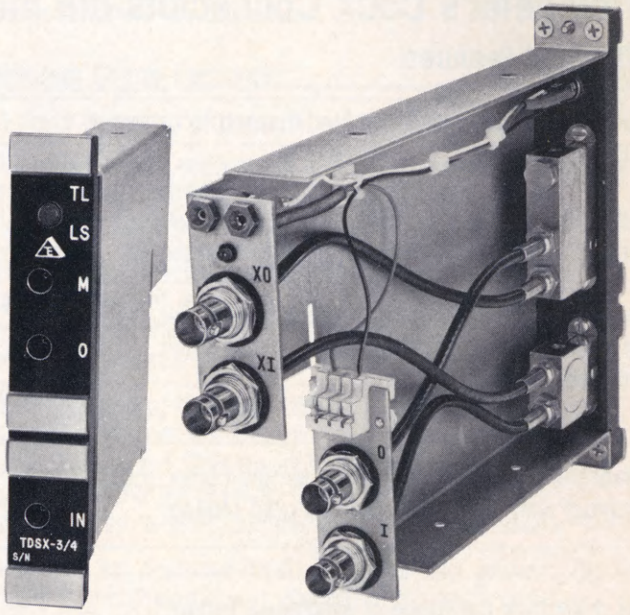
Consult the factory for high density versions.

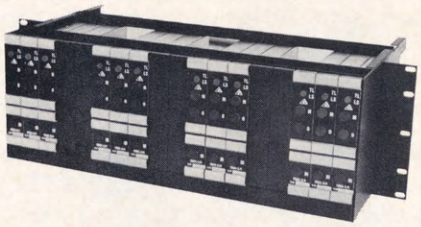
### CROSS-CONNECT MODULE

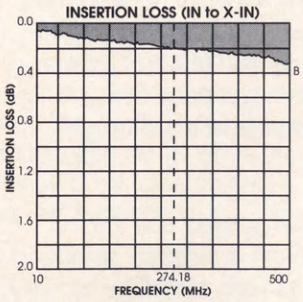
| | | |
|---|---|---|
| BNC rear entry | **TDSX-3/4** | 75Ω |
| TNC rear entry | **TDSX-3/4H** | 75Ω |

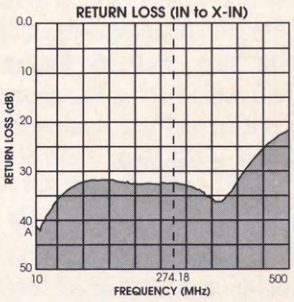
The TDSX-3/4 module is designed for accessing and cross-connecting the following DS transmissions:

| | |
|---|---|
| DS4 | 274 Megabits |
| DS-4E | 139 Megabits |
| DS-3 | 45 Megabits |






See Telecom Applications Page 4

## Trompeter's quality coax connectors are designed with "unique features" to provide:

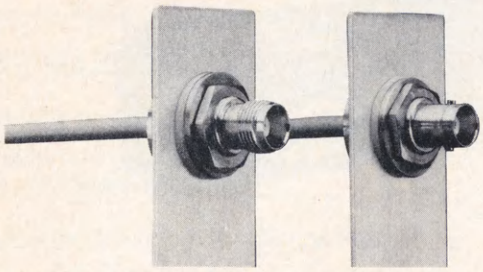
- Superior mechanical performance for reliability and durability
- Simple construction for fast, easy assembly • Excellent electrical performance

Broadcast and Telecom Applications - Page 4 Custom Adapters - Page 52 Performance Specifications - Page 66

## Trompeter's Coax Connectors are made with the following design features:

| Standard Features: | Benefits: |
|---|---|
| All metallic parts are **machined/formed** to extremely close tolerances. | Better intermateability. Improves EMI/RFI suppression and reduces signal loss. |
| All bodies are made of **top quality brass** with a **bright nickel-plated**, non-tarnish finish, standard. | Resists tarnishing and the associated reduction of conductivity. |
| Fully enclosed **heat-treated beryllium-copper** outer conductor spring. Not half-hard slotted brass. Patented feature! | Prevents contact distortion and mechanical damage. Improves EMI/RFI suppression and reduces signal loss. Improves durability cycling providing positive electrical over 1000s of cycles. |
| **Heat-treated beryllium-copper** female center socket contact with **50 millionths inch gold plating.** | Superior spring properties, maintains contact resilience. Improves durability cycling providing positive electrical contact over 1000s of cycles. |
| All dielectrics are made of **machined Teflon™**. | Superior Teflon™ insulating properties to withstand the high temperatures encountered when soldering. |

### COAXIAL GROUND FILTER BULKHEAD JACKS



BJ46GF TNC VERSION BJ26GF BNC VERSION

These connectors reduce radiated electrical noise to meet the EMI/RFI requirements of the FCC regulation on **RFI interference - Part 15, Subpart J,** as a result of Docket 20780 which limits the allowable emissions from computers and their peripheral equipment to a range of 20 to 1000 MHz.

Radiated interference from HF components and the harmonics of an electrical pulse are avoided by using a **built-in capacitor** which acts as **high pass filter** to attenuate spurious HF signals while avoiding ground loop direct contact current flow by bypassing the signals harmlessly to the ground.

Connectors with Ground Filter versions are designated by **"GF"** with part numbers listed on page 27.

### GROUND FILTER SPECIFICATIONS:

**RF Insertion Loss:** 0.1 dB max. to 1 GHz

**Dissipation Factor:** 5% max. @ 1 KHz & 25°C

**Voltage Rating:** 200 VDC @ sea level & 25°C

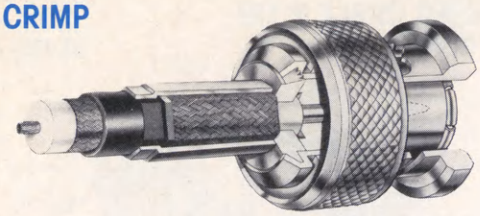
**Capacitance:** 4nF min., 10nF max. @ 1 KHz & 25°C

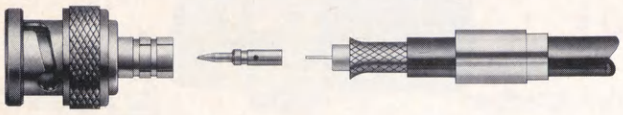
**Insulation Resistance:**
1 Gigohm min. @ 200 VDC & 25°C

**Dielectric Withstanding Voltage:**
500 VDC @ sea level & 25°C for 1 minute

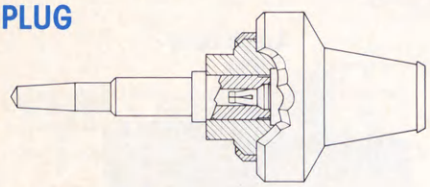
**Filter RF Attenuation:**
1 MHz - 1 dB, 3 MHz - 2 dB, 10 MHz - 8 dB
30 MHz - 16 dB and 100/300/1000 MHz - 30 dB

## TOOL CRIMP

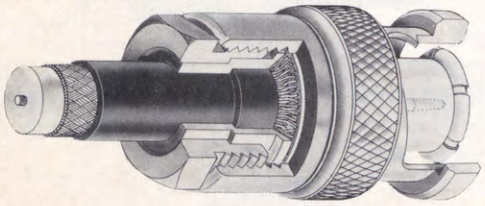


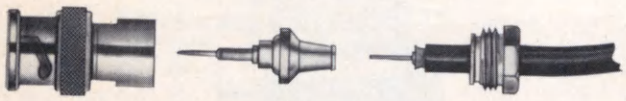


## QUICK PLUG



## WRENCH CRIMP





## TOOL CRIMP COAX CONNECTORS

These connectors are designed for **fast, reliable** and **durable** terminations with a pull-to-destruct force approaching the tear strength of the cable itself! Exceeds **MIL-C-39012B, category "D"** requirements!

### Tool Crimp Features:

**3-piece construction** for easy assembly.

A **captive center contact pin** with **50 millionths inch gold plating** prevents the pistoning of the center contact when the cable is flexed and does not rely on the cable for positioning.

The coupling sleeve is **spring-loaded** with a **beryllium copper crescent washer** to assure full mating, reduced rocking when the connector is mated and to assure that mating is maintained in rugged applications.

A full **.500 inch crimp sleeve** and a **.300 inch ferrule** provides a longer crimp area for the connector-to-cable mechanical crimp to increase the tensile pull-strength of the termination.

A **step** in the **crimp sleeve** grips the outer jacket to increase the pull-strength of the termination.

**Radial and axial grooves** on ferrule prevent movement of the cable braid.

## WRENCH CRIMP COAX CONNECTORS

These are **rugged, dependable** connectors with superior electrical and mechanical performance. This series uniquely holds TFE and similarly jacketed cable without additional hardware and is **equally effective** when used with **double braided cable** such as the RG223.

This **unique combination of features** results in a required **connector-to-cable pull-to-destruct force** approaching the tear strength of the cable itself.

### Wrench Crimp Features:

**3 piece construction** for fast easy assembly.

A **captive center contact pin** in the cone assembly prevents the pistoning of the center contact when the cable is flexed and does not rely on the cable for positioning.

The coupling sleeve is **spring-loaded** with a **beryllium-copper crescent washer** to assure full mating, reduced rocking when the connector is mated and to assure that mating is maintained in rugged applications.

A **freely rotating captured insert** inside the coupling nut assembly permits the clamping of the braid without any rotary movement. This prevents the breaking of the center conductor and the twisting/tearing of the outer braid. Increases the tensile pull strength of the termination.

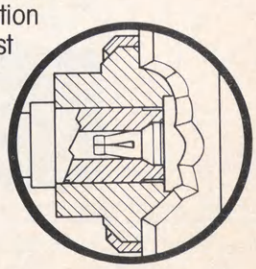
A **step** in the **captured insert** grips the outer jacket of the cable to increase the pull strength of the termination. (Outer jacket - Up to 25% of the strength of the cable.)

The **360° metal-to-metal capture of the outer-braid** to the cone assembly leaves no insulation between the clamping surfaces and provides a true metal-to-metal continuous shield minimizing EMI/RFI problems. This also minimizes the "cold flow" problems associated with **TFE type** jacketing and increases the pull-strength of the termination.

The **machined barb** on the end of the cone assembly grabs the inside of the braid to help hold the assembly in place for easier assembling. The additional grip also enhances the strength of the braid and jacket clamp to increase the pull-strength of the termination.

## QUICK PLUG VERSIONS!

Trompeter has designed **"Quick Plug"** versions for BNC/TNC **Wrench Crimp** cable plugs and RG59, solid center conductor wire. The connector utilizes a **solderless, scratch-free** center conductor retention clamp in the cone assembly for fast positive terminations.



Available versions referenced by **"QP"**

For RG-62 cable cut center conductor wire diagonally.

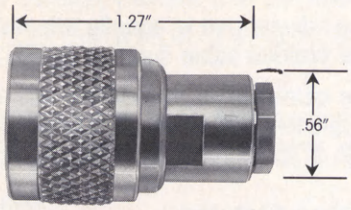
# COAX CONNECTORS

## Standard Coax Threaded 95 Series, N Connectors

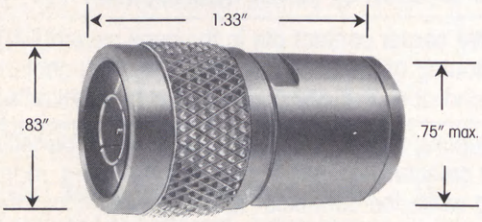
### CABLE PLUG
Wrench Crimp

**PL95-⚠ 50Ω**
**UPL95-⚠ 75Ω**

**Standard**




**Large Body**

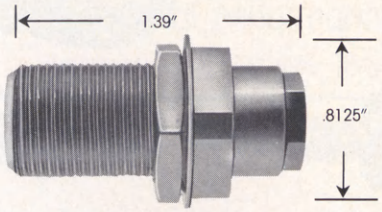



ZIP-SHIP TROMPETER

### BULKHEAD CABLE PLUG
Wrench Crimp

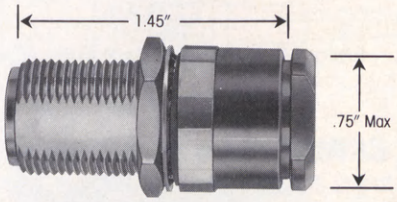
**BJ95-⚠ 50Ω**
**UBJ95-⚠ 75Ω**

**Standard**




DD1.203

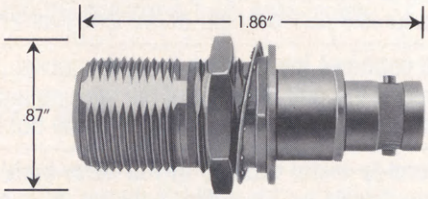
**Large Body**




DD4.310*

### BNC ADAPTER

**AD95 50Ω**
**UAD95 75Ω**

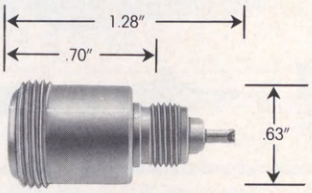



DD4.203*

ZIP-SHIP TROMPETER

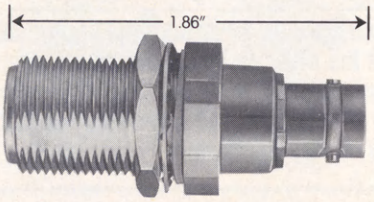
### BULKHEAD JACK
Solder pot
With hex nut and washer

**J95-⚠ 50Ω**
**UJ95-⚠ 75Ω**




### INSULATED BNC ADAPTER

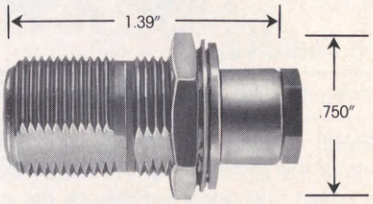
**AD195 50Ω**
**UAD195 75Ω**




DD4.31*

### INSULATED BULKHEAD CABLE JACK
Wrench Crimp

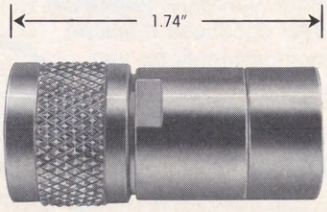
**BJ96-⚠ 50Ω**
**UBJ96-⚠ 75Ω**




DD4.203*

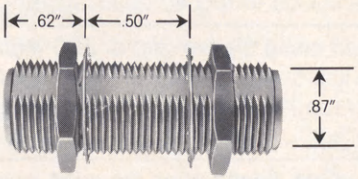
### TERMINATION PLUG
No Plug, No Chain
Chain version page 32

**TNN1-1 50Ω**
**UTNN1-1 75Ω**




### FEED-THROUGH JACK
Panels up to 2.25″ thick

**BJ98-2 50Ω**
**UBJ98-2 75Ω**




ZIP-SHIP TROMPETER

⚠- Cable Group # page 33, * Mounting Holes page 58, Tools page 51


TROMPETER ELECTRONICS, INC. VISA MasterCard (818) 707-2020 • FAX (818) 706-1040

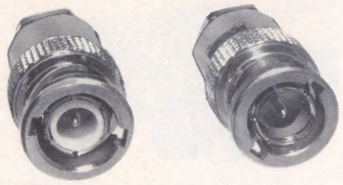
# COAX CONNECTORS

## Miniature Coax 20/220 Series, BNC Plugs & Jacks

### CABLE PLUG
Wrench Crimp

**PL20-⚠ 50Ω**
**UPL20-⚠ 75Ω**

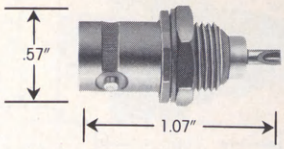
50Ω 75Ω



**QP20** - Quick Plug ( 50Ω only)

### BULKHEAD JACK
Front Mount, Solder pot

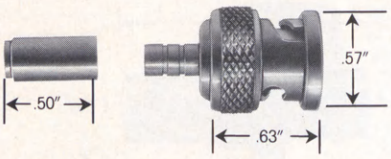
**BJ20** 50Ω
**UBJ20** 75Ω




D5.125*

### CABLE PLUG
Tool Crimp

**PL220-⚠ 50Ω**
**UPL220-⚠ 75Ω**




### CABLE JACK
Wrench Crimp

**CJ20-⚠ 50Ω**
**UCJ20-⚠ 75Ω**

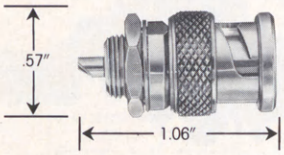
50Ω 75Ω

50″*

*.57″ Cable Groups 6 & 6E

### BULKHEAD PLUG
Front Mount, Solder pot

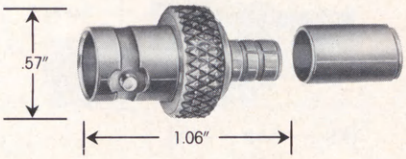
**PL21** 50Ω
**UPL21** 75Ω




C2.085*

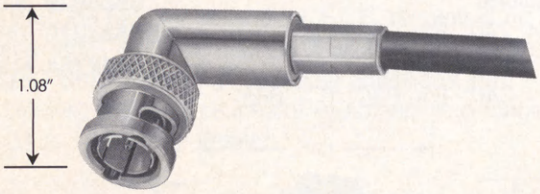
### CABLE JACK
Tool Crimp

**CJ220-⚠ 50Ω**
**UCJ220-⚠ 75Ω**



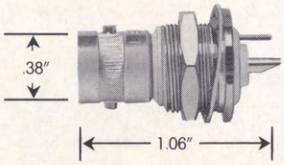

### RIGHT ANGLE CABLE PLUG
Full Crimp Non-Enclosed Spring Fingers
Consult Factory for 50Ω

**UPLRN220-⚠ 75Ω**




### INSULATED BULKHEAD JACK
Rear Mount, Solder pot

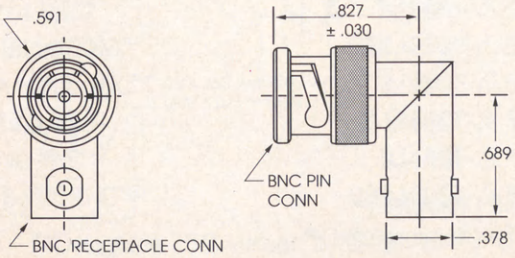
**BJ21** 50Ω
**UBJ21** 75Ω




D3.147*

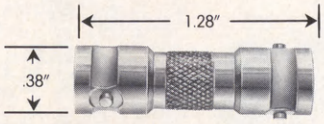
### RIGHT ANGLE ADAPTER
BNC

**UADRNMF20** 75Ω




### BNC COUPLING ADAPTER

**AD28** 50Ω
**UAD28** 75Ω



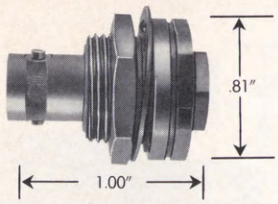

⚠- Cable Group # page 33, **GF** page 27, * Mounting Holes page 58, Crimp Tools page 51

# COAX CONNECTORS

## Miniature Coax 20/220 Series, BNC Bulkhead Jacks

### INSULATED BULKHEAD CABLE JACK
Wrench Crimp, Rear Mount

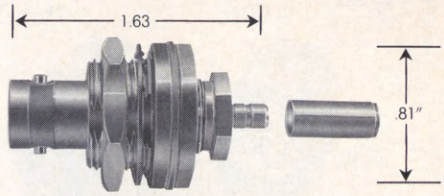
**BJ26-⚠ 50Ω**
**UBJ26-⚠ 75Ω**




"GF"
D2.143*

### INSULATED BULKHEAD CABLE JACK
Rear Mount, Tool Crimp

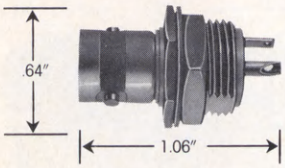
**BJ226-⚠ 50Ω**
**UBJ226-⚠ 75Ω**




"GF"
D2.143*

### INSULATED BULKHEAD JACK
Front Mount, Solder pot

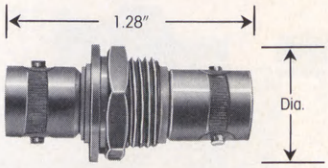
**BJ27 50Ω**
**UBJ27 75Ω**




D3.147*

### INSULATED BULKHEAD
Feed-through Jack

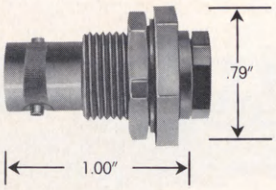
**BJ28 50Ω**
**UBJ28 75Ω**




D3.156*

### BULKHEAD CABLE JACK
Rear Mount

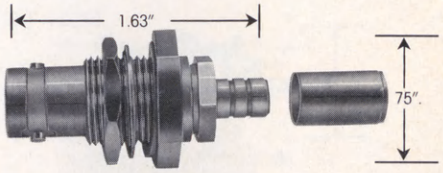
**BJ29-⚠ 50Ω**
**UBJ29-⚠ 75Ω**




D3.218*
D2.218 (Gps 6 & 6E)*

### BULKHEAD CABLE JACK
Rear Mount, Tool Crimp

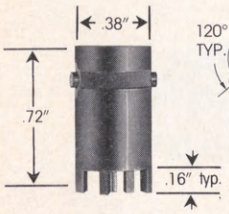
**BJ229-⚠ 50Ω**
**UBJ229-⚠ 75Ω**

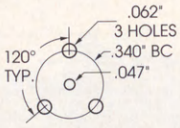


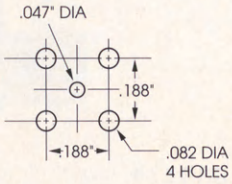

D3.218*
D2.218 (Gps 6 & 6E)*

### RECEPTACLE
Circuit Board

3-leg **CBJ20 50Ω**
3-leg **UCBJ20 75Ω**
4-leg **CBJ22 50Ω**
4-leg **UCBJ22 75Ω**

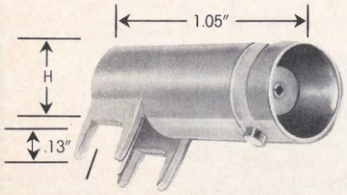


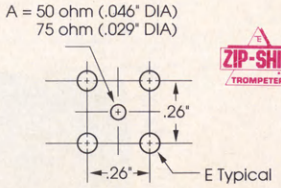



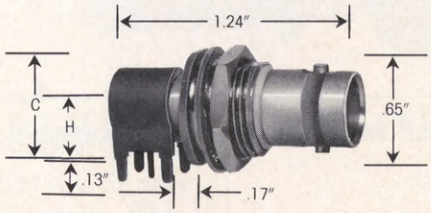

### RIGHT ANGLE CIRCUIT BOARD JACK
H = .240", E = .0625"
Add "A" for Tall Version
H = .340", E = .070"

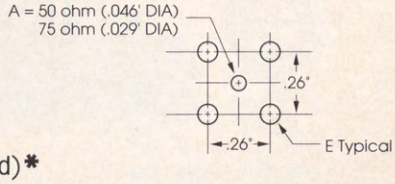
**CBJR20 50Ω**
**UCBJR20 75Ω**




### RIGHT ANGLE CIRCUIT BOARD BULKHEAD JACK
Insulated **CBBJR26 50Ω**
H = .240", E = .0625", C = .565" **UCBBJR26 75Ω**
Non-Insulated **CBBJR29 50Ω**
H = .240", E = .0625", C = .565" **UCBBJR29 75Ω**
Add "A" for Tall Version Ex.: **CBBJR26A 50Ω**
H = .340", E = .070", C = .665"




D3.156 (Insulated)*
D3.179 (Non-insulated)*

⚠- Cable Group # page 33, * Mounting Holes page 58, Crimp Tools page 51


TROMPETER ELECTRONICS, INC. (818) 707-2020 • FAX (818) 706-1040

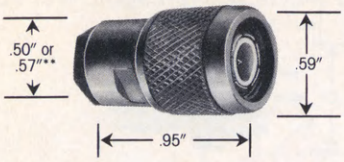
# COAX CONNECTORS

## Miniature Coax Threaded 40/240 Series, TNC Plugs & Jacks



### CABLE PLUG
Wrench Crimp

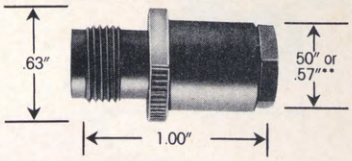
**PL40-⚠ 50Ω**
**UPL40-⚠ 75Ω**




**QP40** - Quick Plug (50Ω only)

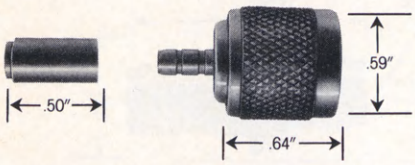
### CABLE JACK
Wrench Crimp

**CJ40-⚠ 50Ω**
**UCJ40-⚠ 75Ω**




### CABLE PLUG
Tool Crimp

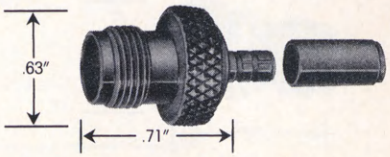
**PL240-⚠ 50Ω**
**UPL240-⚠ 75Ω**




MIL-C-39012/26D

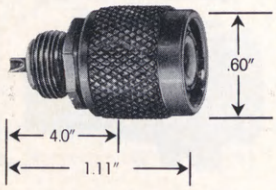
### CABLE JACK
Tool Crimp

**CJ240-⚠ 50Ω**
**UCJ240-⚠ 75Ω**




### BULKHEAD PLUG
Front mount, Solder pot

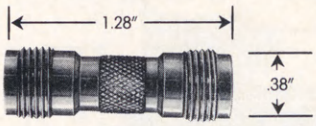
**PL41 50Ω**
**UPL41 75Ω**




C2.085 *

### TNC COUPLING ADAPTER

**AD48 50Ω**
**UAD48 75Ω**

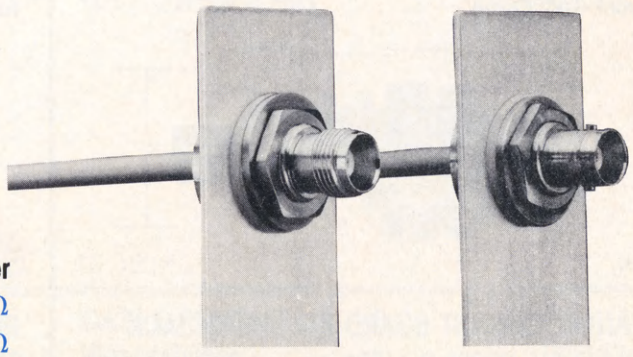



### COAXIAL GROUND FILTER BULKHEAD JACKS

Designated in catalog pages by **"GF"**

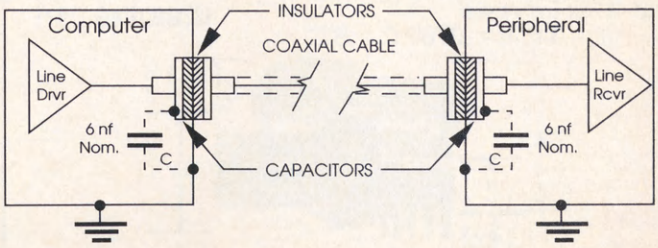
These connectors reduce radiated electrical noise to meet the EMI/RFI requirements of the F.C.C. regulation on RFI interference - Part 15, Subpart J, as a result of Docket 20780 which limits the allowable emissions from computers and their peripheral equipment to a range of 20 to 1000 MHz Wrench.

**TNC Version** **BNC Version**



| Type | Part Number |
|---|---|
| Crimp BNC** | **BJ26GF-⚠ 50Ω** |
| Tool Crimp BNC** | **BJ226GF-⚠ 50Ω** |
| Feed Thru BNC** | **BJ28GF-⚠ 50Ω** |
| Circuit Board BNC** | **CBBJ26GF-⚠ 50Ω** |
| Wrench Crimp TNC** | **BJ46GF-⚠ 50Ω** |
| Tool Crimp TNC | **BJ246GF-⚠ 50Ω** |
| Feed Thru TNC** | **BJ48GF-⚠ 50Ω** |
| Circuit Board TNC** | **CBBJ46GF-⚠ 50Ω** |

**Designate 75Ω version by prefix "U"



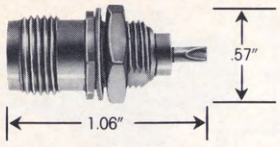

⚠- Cable Group # page 33, **QP** page 23, * Mounting Holes page 58, Crimp Tools page 51

# COAX CONNECTORS

## Miniature Coax Threaded 40/240 Series, TNC Bulkhead Jacks

### BULKHEAD JACK
Solder pot

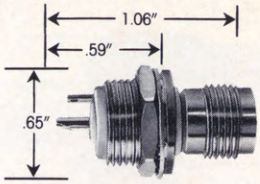
**BJ40** 50Ω
**UBJ40** 75Ω




D5.125*

### INSULATED BULKHEAD JACK
Front Mount, Solder pot

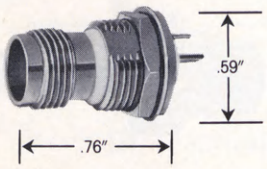
**BJ47** 50Ω
**UBJ47** 75Ω




D3.147*

### INSULATED BULKHEAD JACK
Rear Mount, Solder pot

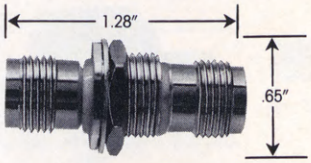
**BJ41** 50Ω
**UBJ41** 75Ω




D3.147*

### INSULATED FEED-THROUGH BULKHEAD JACK

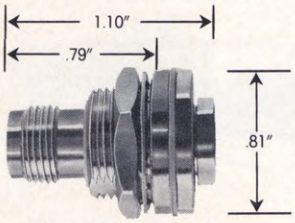
**BJ48** 50Ω
**UBJ48** 75Ω




"GF"
D3.156*

### INSULATED BULKHEAD JACK
Rear Mount, Wrench Crimp

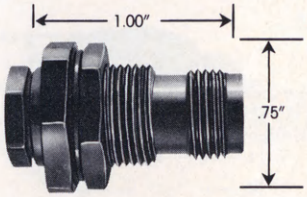
**BJ46-**△ 50Ω
**UBJ46-**△ 75Ω




"GF"
D2.143*

### BULKHEAD CABLE JACK
Wrench Crimp

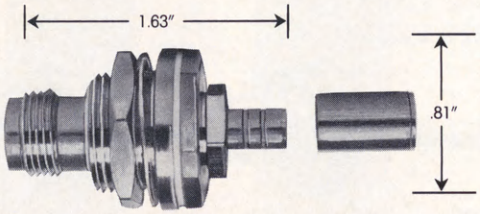
**BJ49-**△ 50Ω
**UBJ49-**△ 75Ω




D3.218*
D2.218 (Gp 6 & 6E)*

### INSULATED BULKHEAD JACK
Rear Mount, Tool Crimp

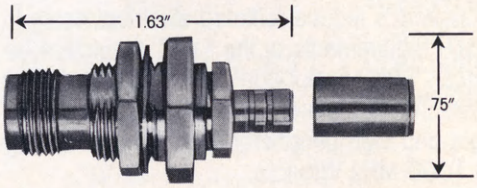
**BJ246-**△ 50Ω




"GF"
D3.147*

### BULKHEAD CABLE JACK
Tool Crimp

**BJ249-**△ 50Ω

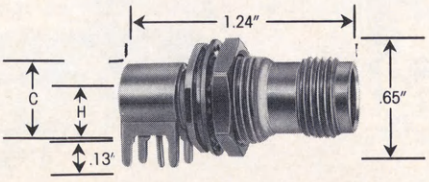



D3.218*
D2.218 (Gp 6 & 6E)*

### RIGHT ANGLE CIRCUIT BOARD BULKHEAD JACK

H = .24″, E = .0625″, C = .57″
Add "A" for Tall Version
H = .34″, E = .070″, C = .67″

**CBBJR46** 50Ω
**UCBBJR46** 75Ω




### RFI PLUG CAP

**RFI45-3**

2.5″ Nylon Chain
Other Chain versions page 32.

△- Cable Group # page 33, "GF" page 27, * Mounting Holes page 58, Crimp Tools page 51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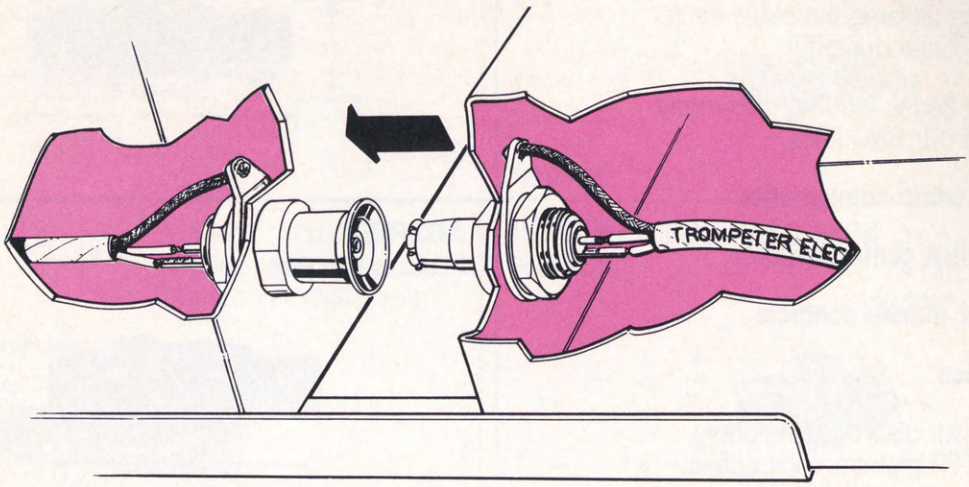
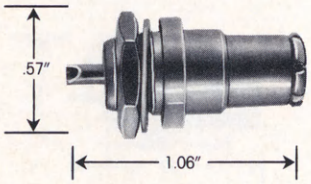
## TROMPETER'S 120 SERIES

These BNC/TNC push-on jacks and plugs are designed for blind mate rack and panel applications. The male plugs mate with any BNC/TNC jack and are ideally suited for test/probe applications.




### PANEL PLUG
Solder pot

**PL121** 50Ω
**UPL121** 75Ω

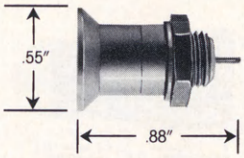



C2.085*

ZIP-SHIP TROMPETER

### BULKHEAD JACK
Solder Lug

**BJ120** 50Ω
**UBJ120** 75Ω

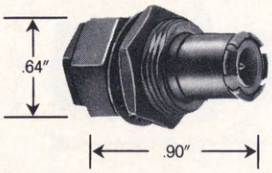



C1.120*

ZIP-SHIP TROMPETER

### PANEL PLUG
Cable Entry

**PL122-△** 50Ω
**UPL122-△** 75Ω

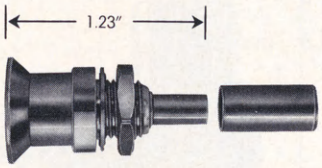



DD5.156*

ZIP-SHIP TROMPETER

### BULKHEAD JACK
Tool Crimp Solder Entry

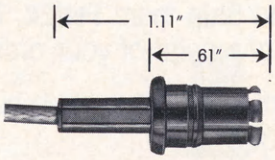
**BJ120C-△** 50Ω
**UBJ120C-△** 75Ω




C1.120*

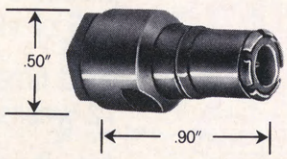
### CABLE PLUG
Tool Crimp

**PL223-△** 50Ω
**UPL223-△** 75Ω




### CABLE PLUG
Wrench Crimp

**PL123-△** 50Ω
**UPL123-△** 75Ω




ZIP-SHIP TROMPETER

△- Cable Group # page 33, * Mounting Holes page 58, Crimp Tools page 51

# COAX CONNECTORS

## Miniature Coax Threaded 130 Series, F Connectors

### TROMPETER'S 130 SERIES

The F connector has traditionally been a low cost plier-crimp device utilizing the cable center conductor for a center contact.

Trompeter's 130 Series incorporates many of the features of our BNC lines.

**3-piece wrench crimp configuration**

**Gold plated captive center contacts**

**Beryllium copper female contacts**

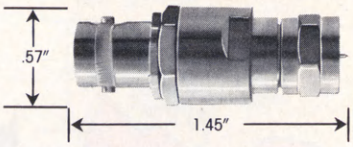
**Teflon™ dielectrics**

The 130 Series will also accommodate non-flammable FEP plenum coax cables

Cable Tables pages 62-65

### ADAPTER — AD130 75Ω

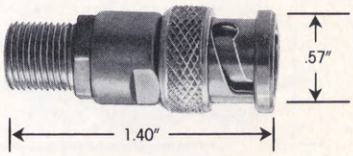
F Plug to BNC Jack




ZIP-SHIP TROMPETER

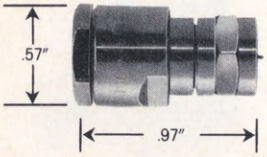
### ADAPTER — AD133 75Ω

F Jack to BNC Plug




ZIP-SHIP TROMPETER

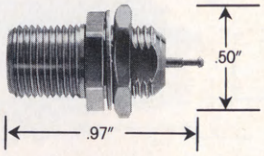
### MALE CABLE PLUG — PL130-⚠ 75Ω




ZIP-SHIP TROMPETER

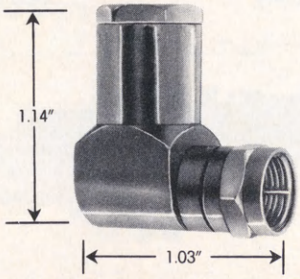
### BULKHEAD CABLE JACK — BJ130 75Ω

Solder lug



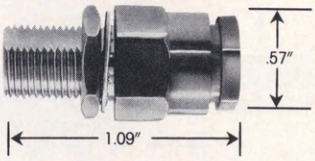

DD2.094✱

### RIGHT ANGLE MALE CABLE PLUG — PL131 75Ω




### BULKHEAD CABLE JACK — BJ139 75Ω

Wrench Crimp




DD2.125✱

### OBSESSION: On-Time Delivery — Zip Ship Service

ZIP-SHIP 24 HR. TROMPETER

Remember . . . the **ZIP-SHIP** symbol means that we can **Zip** stock products from our expanded inventory and **Ship** them **FedEx, DHL, UPS** or via your routing within 24 hours of receipt of your order!

Lead times for many Non-stock or Custom items have been cut from 12 weeks to 8 weeks or less!

**Ask about ZIP-SHIP Service when you phone in your order.**

⚠- Cable Group # page 33, ✱ Mounting Holes page 58



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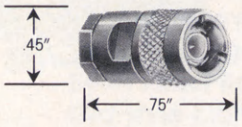
# COAX CONNECTORS

## Sub-Miniature Coax Threaded 50/350 Series, TPS/TCM Jacks & Plugs

### CABLE PLUG
Wrench Crimp

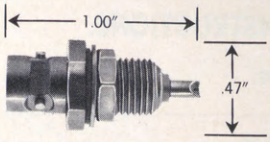
| | |
|---|---|
| 3-lug | PL50-⚠ 50Ω |
| 4-lug | PL50FL-⚠ 50Ω |
| Threaded | PL350-⚠ 50Ω |




ZIP-SHIP TROMPETER

### BULKHEAD JACK
Solder pot

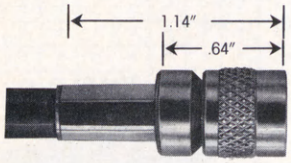
| | |
|---|---|
| 3-lug | BJ50-⚠ 50Ω |
| 4-lug | BJ50FL-⚠ 50Ω |
| Threaded | BJ350-⚠ 50Ω |




D6.218*

### CABLE PLUG
Tool Crimp

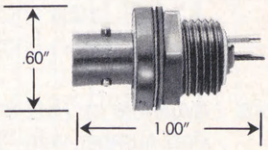
| | |
|---|---|
| 3-lug | PL50C-⚠ 50Ω |
| 4-lug | PL50CFL-⚠ 50Ω |
| Threaded | PL350C-⚠ 50Ω |




ZIP-SHIP TROMPETER

### INSULATED BULKHEAD JACK
Solder pot

| | |
|---|---|
| 3-lug | BJ57-⚠ 50Ω |
| 4-lug | BJ57FL-⚠ 50Ω |
| Threaded | BJ357-⚠ 50Ω |

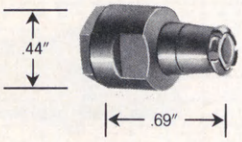



D4.171*

ZIP-SHIP TROMPETER

### PUSH-ON PLUG TPS/TCM
Wrench Crimp

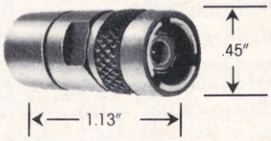
PL53-⚠ 50Ω




### TERMINATION
TPS, No chain

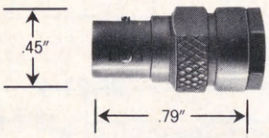
Chain versions page 32

TNB1-1-R



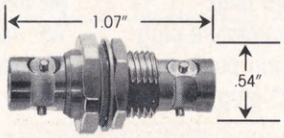

### CABLE JACK
Wrench Crimp

| | |
|---|---|
| 3-lug | CJ50-⚠ 50Ω |
| 4-lug | CJ50FL-⚠ 50Ω |
| Threaded | CJ350-⚠ 50Ω |




### FEED-THROUGH BULKHEAD JACK

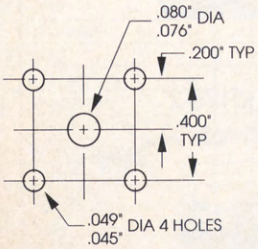
| | |
|---|---|
| 3-lug | BJ58-⚠ 50Ω |
| 4-lug | BJ58FL-⚠ 50Ω |
| Threaded | BJ358-⚠ 50Ω |

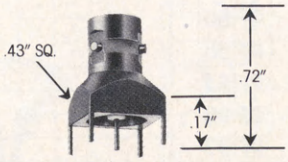



D5.171*
D4.171 (TCM)*

### CIRCUIT BOARD JACK

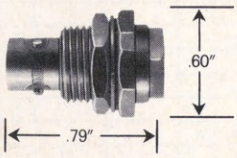
| | |
|---|---|
| 3-lug | CBJ50-⚠ 50Ω |
| 4-lug | CBJ50FL-⚠ 50Ω |
| Threaded | CBJ350-⚠ 50Ω |




### BULKHEAD JACK
Wrench Crimp

| | |
|---|---|
| 3-lug | BJ59-⚠ 50Ω |
| 4-lug | BJ59FL-⚠ 50Ω |
| Threaded | BJ359-⚠ 50Ω |




D4.125*

⚠- Cable Group # page 33, * Mounting Holes page 58, Crimp Tools page 51

# COAX CONNECTORS

## Coax Terminations & RFI Caps

Trompeter provides Termination and RFI cap versions of many of our connectors. Resistors are normally **.125 watt for subminiature** connectors and **.500 watt for miniature and standard size** connectors with **2% tolerances for all.**

### ORDERING INSTRUCTIONS:

**For Terminations:** **Part Number - ____ - ____**
Chain # _____
Resistance _____

**For RFI Caps:** **Part Number - ____**
Chain # _____

### CHAIN NUMBERS:

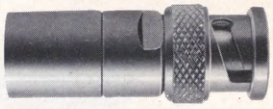
**1** - No chain
**2** - 2.5″ brass chain
**3** - 2.5″ nylon chain
**4** - 3.0″ brass chain
**5** - 3.0″ nylon chain
**6** - 6.0″ brass chain
**7** - 6.0″ nylon chain

***Asterisked connectors:** Available in 75Ω version by prefixing Part number with **"U"** Ex: **UTNA1-1-Ω**

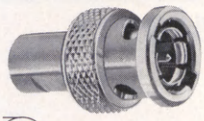
| Page | Termination Description | Mating Part | Part Number |
|---|---|---|---|
| 25 | PL20 BNC* | BNC jacks | TNA1 |
| 25 | CJ20 BNC* | BNC plugs | TNAF1 |
| 29 | PL123 BNC/TNC push-on* | BNC/TNC jacks | TNAP1 |
| 25 | PL220 BNC midget* | BNC jacks | TNAS1 |
| 25 | CJ220 BNC midget* | BNC plugs | TNASF1 |
| 25 | PL220 Short push-on* | BNC/TNC jacks | TNASP1 |
| 31 | PL50 TPS | TPS jacks | TNB1 |
| 29 | PL130 F | F jacks | TNF1 |
| 27 | PL40 TNC* | TNC jacks | TNH1 |
| 27 | CJ40 TNC* | TNC plugs | TNHF1 |
| 24 | PL95 N* | N jacks | TNN1 |
| 24 | BJ95 N* | N plugs | TNNBJ1 |
| 17 | PL94 Precision | J94 jack | TNP1 |
| 11 | PL1 RCA Standard plug | RCA standard jacks | TP |
| 15 | PL3 Miniature plug | Miniature jacks | TPM |
| 20 | PL1C1 WE miniature plug | WE miniature jacks | TPMW |
| 17 | PL93 Precision push-on | J94 jacks | TPP |
| 11 | PL1W WECO plug | WECO standard jacks | TPW |

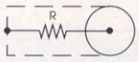
| Page | Mating Part | RFI Cap Description | Part Number |
|---|---|---|---|
| 11 | J3/J3W | Patch Plug cap | RFI20 |
| 25 | PL20 | BNC jack cap | RFI21 |
| 25 | BJ20 | BNC plug cap | RFI25 |
| 27 | PL40 | TNC jack cap | RFI41 |
| 27 | BJ40 | TNC plug cap | RFI45 |
| 15 | J8 | Miniature patch jack cap | RFI50 |
| 31 | BJ50 | TPS plug cap | RFI55 |
| 15 | J94 | PL94 patch plug cap | RFI94 |
| 24 | BJ95 | N plug cap | RFI95 |
| 24 | PL95 | N jack cap | RFI97 |
| 29 | BJ130 | F plug cap | RFI130 |
| 31 | TPS threaded plug | TPS threaded plug cap | RFI355 |

TNA1-1-Ω

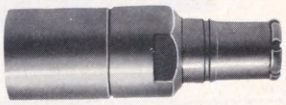


TNAS1-1-Ω

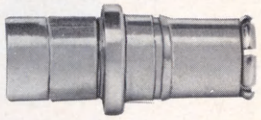




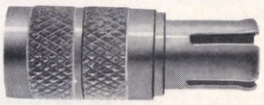

TNAP1-1-Ω



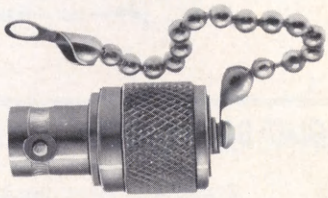
TNASP1-1-Ω



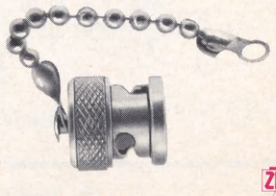
RFI20-1



RFI21-4



RFI25-2



ZIP-SHIP TROMPETER



TROMPETER ELECTRONICS, INC. VISA MasterCard (818) 707-2020 • FAX (818) 706-1040

# CONNECTOR/CABLE COMPATIBILITY TABLES

**Select your connector and read across to find available cable group numbers.**
**Cable Group Numbers are provided for over 800 cables from many manufacturers on pages 62-65.**

- • - Connector available for that cable group.
- □ - Requires Large Body version of connector.
- ⊙ - Bend Relief Boot Available.
- ◇ - Old-style clamp, not Wrench Crimp.

## Coax "Wrench Crimp" Connectors

| PAGE | CONNECTOR | CABLE GROUP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 2A | 2B | 3 | 3A | 4 | 5 | 5A | 5B | 6 | 6A | 6B | 6E | 9 | 10 | 21 | 22 | 25 | 29 | 31 | 34 | 36 | 37 | 41 | 44 | 48 | 50 | 51 | 52 | 53 | 63 | 086 | 141 | BR |
| 27 | *BJ26 | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | | | | | | | ⊙ | ⊙ | | | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | ⊙ | | | | | ⊙ | ⊙ | ⊙ | ⊙ | Y |
| 26 | *BJ29 | • | • | • | • | • | • | • | • | • | • | • | | | • | | | • | • | | | • | • | • | • | • | • | | | • | • | • | • | • | • | Y |
| 28 | *BJ46 | • | • | • | • | • | • | • | • | • | • | | | | | | | • | • | | | • | • | • | | • | • | | | | | • | • | • | • | Y |
| 28 | *BJ49 | • | • | • | • | • | • | • | • | • | • | • | | | • | | | • | • | | | • | • | • | • | • | • | | | • | • | • | • | • | • | Y |
| 31 | BJ59 | • | • | • | ◇ | • | | • | • | • | | | | | | | | | • | | | • | | | | | | | | | | | | • | • | N |
| 31 | BJ59FL | • | • | • | ◇ | • | | • | • | • | | | | | | | | | • | | | • | | | | | | | | | | | | • | • | N |
| 24 | *BJ95 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | • | • | | | • | • | • | • | • | • | • | • | | | | | • | • | N |
| 24 | *BJ96 | • | • | • | • | • | • | • | • | • | • | | | | | | | • | • | | | • | • | • | • | • | • | | | | | | | • | • | Y |
| 30 | BJ139 | • | • | • | • | • | • | • | • | • | • | | | | | | | • | • | | | • | • | • | • | • | | | | | | | | • | • | N |
| 31 | BJ359 | • | • | • | ◇ | • | | • | • | • | | | | | | | | | • | | | • | | | | | | | | | | | | • | • | Y |
| 25 | *CJ20 | • | • | • | • | • | • | • | • | • | • | • | □ | □ | • | | | • | • | | | • | • | • | • | • | • | □ | □ | • | • | • | • | • | • | Y |
| 27 | *CJ40 | • | • | • | • | • | • | • | • | • | • | • | □ | □ | • | | | • | • | | | • | • | • | • | • | • | □ | □ | • | • | • | • | • | • | Y |
| 31 | CJ50/CJ50FL | • | • | • | ◇ | • | | • | • | • | | | | | | | | | • | | | • | | | | | | | | | | | | • | • | N |
| 31 | CJ350 | • | • | • | ◇ | • | | • | • | • | | | | | | | | | • | | | • | | | | | | | | | | | | • | • | N |
| 7 | J3E/J3WE | • | • | • | • | • | | • | • | | | • | | | • | | | | • | | | | | | | | | | | | | | • | • | | N |
| 18 | J12 | • | • | | • | • | | • | • | | | • | | | | | | | | | | | | | | | | | | | | | | • | • | N |
| 8 | J15 | • | • | • | • | • | • | • | • | • | • | • | | | • | • | • | • | • | • | • | | • | • | • | | | | | | | | | | | N |
| 18 | J15MW | • | • | • | • | • | • | • | • | • | • | • | | | | | | • | • | | | | | | | | | | | | | | | • | • | N |
| 18 | J16MW | • | • | • | • | • | • | • | • | • | • | • | | | | | | • | • | | | | | | | | | | | | | | | • | • | N |
| 25 | *PL20 | ⊙ | ⊙ | • | • | • | • | • | ⊙ | • | • | • | □ | □ | • | | | • | • | | | • | • | • | • | • | • | □ | □ | • | • | • | • | • | • | Y |
| 27 | *PL40 | ⊙ | ⊙ | • | • | • | • | • | ⊙ | • | • | • | □ | □ | • | | | • | • | | | • | • | • | • | • | • | □ | □ | • | • | • | • | • | • | Y |
| 31 | PL50/ PL50FL | • | • | • | ◇ | • | | • | • | • | | | | | | | | | • | | | • | | | | | | | | | | | | • | • | N |
| 31 | PL53 | • | • | • | ◇ | • | | • | • | • | | | | | | | | | • | | | • | | | | | | | | | | | | • | • | N |
| 15 | PL93 | • | • | • | • | • | • | | | | | | • | • | | | | • | | | | | • | | | | | • | | | | | | • | • | N |
| 15 | PL94 | • | • | • | • | • | • | | | | | | • | • | | | | • | | | | | • | | | | | • | | | | | | • | • | N |
| 24 | *PL95 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | • | • | | | • | • | • | • | • | • | • | • | | | | | • | • | Y |
| 29 | *PL122 | • | • | • | • | • | • | • | • | • | • | | | | | | | • | • | | | | • | • | | • | • | | | | | | • | • | • | N |
| 29 | *PL123 | • | • | • | • | • | • | • | • | • | • | • | | | • | | | • | • | | | | • | • | • | • | • | | | • | • | • | • | | | Y |
| 30 | PL130 | • | • | • | • | • | | • | • | | | • | | | • | | | | | | | | | | | • | | | | | • | | | | | N |
| 30 | PL131 | • | • | • | • | • | | • | • | | | • | | | • | | | | | | | | • | | | • | | | | | • | | | | | N |
| 31 | PL350 | • | • | • | ◇ | • | | • | • | • | | | | | | | | | | | | | • | • | | | | | | | | | | • | • | N |

## Coax "Tool Crimp" Connectors

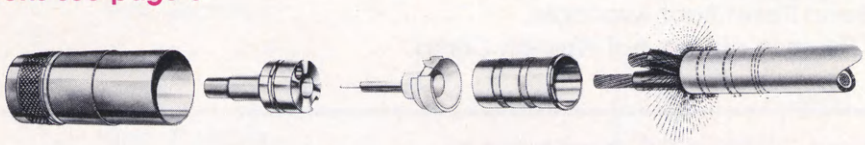
| PAGE | CONNECTOR | CABLE GROUP | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 001 | 002 | 003 | 004 | 005 | 006 | 007 | 008 | 009 | 010 | 012 | 013 | 013A | 014 | 015 | 016 | 017 | 018 | 019 | 020 | 021 | 022 | 023 | 024 | 025 | 026 | 027 | BR |
| 26 | BJ26 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | N |
| 26 | BJ29 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | N |
| 28 | BJ46 | • | • | • | • | • | • | • | • | • | • | • | • | | • | • | • | • | • | • | • | • | • | • | • | • | • | | N |
| 28 | BJ49 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | N |
| 25 | CJ220 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | N |
| 27 | CJ240 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | N |
| 7 | J3C/J3WC | | | • | • | | | | • | • | • | • | • | | | | • | • | • | • | • | | | | | | | | N |
| 18 | J12C | | | • | • | | | • | • | • | • | • | • | | • | • | • | • | | • | • | | | | | | | | N |
| 8 | J13C-R/J13WC-R | | | • | • | | | • | • | • | • | • | • | | | • | • | • | • | • | • | | | | | | | | N |
| 9 | J14C/J14WC | | | • | • | | | | • | • | • | • | • | | | | • | • | • | • | • | | | | | | | | N |
| 9 | J14TC-R /J14TWTC-R | | | • | • | | | | • | • | • | • | • | | | | • | • | • | • | • | | | | | | | | N |
| 9 | J14MC/J14WMC | | | • | • | | | | • | • | • | • | • | | | | • | • | • | • | • | | | | | | | | N |
| 9 | J14MTC/J14WMTC | | | • | • | | | | • | • | • | • | • | | | | • | • | • | • | • | | | | | | | | N |
| 11 | PL1C/PL1WC | | | • | • | | | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | | | • | • | • | N |
| 16 | PL3C | | | • | • | | | • | • | • | • | • | • | | • | | | | | | | | | | | | | | N |
| 20 | PL11C | | | • | • | | | • | • | • | • | • | • | | • | • | • | | | • | | | • | | | • | • | • | N |
| 31 | PL50C/PL350C | • | • | • | • | • | • | • | • | • | • | • | • | | • | • | • | • | • | • | • | • | • | • | • | • | • | | N |
| 25 | *PL220 | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | N |
| 29 | *PL223 | • | • | • | • | • | • | • | • | • | • | • | • | | • | • | • | • | • | • | • | • | • | • | • | • | | | N |
| 27 | *PL240 | • | • | • | • | • | • | • | • | • | • | • | • | | • | • | • | • | • | • | • | • | • | • | • | • | • | • | N |

# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Introduction

**Twinax and Triax connectors** are used when signals require protection from extraneous noise through non-signal-carrying shielding. These interfacing connectors provide contact surfaces isolated from each other and from their outer shields. **Trompeter Twinax and Triax connectors have two (2) isolated concentric contacts that are isolated from the shielding connection and feature Trompeter's patented spring-finger design.**

For Military Applications see page 5



### MINIATURE 2, 3 & 4-lug, & PUSH-ON 70 Series
(TRB)

### MINIATURE THREADED 370 Series
(TRT)

### 70/370 Series Features

Concentric Twinax connectors for when weight is not of primary concern. Used in digital data bus, video pair, **MIL-STD-1553B** (airborne/ground primary/redundant), base-band circuit and any application for "Noise Free Guarded" circuits.

Meets 48-hour salt spray requirement **MIL-C-49142**.

Special platings available to satisfy 500-hour Salt Spray requirement **MIL-STD-1344**.

Fits **MIL-C17/176-00002** and other twinax/triax cables.

Does not require mechanical alignment for mating.

3-lug, 4-lug and threaded versions for improved mechanical stability.

Field serviceable Wrench Crimp for cables up to .625" diameter.

Tool Crimp for quick terminations fits cables up to .247" diameter.

Only five (5) pieces to assemble.

Push-on versions available.

Same size as BNC/TNC connectors.

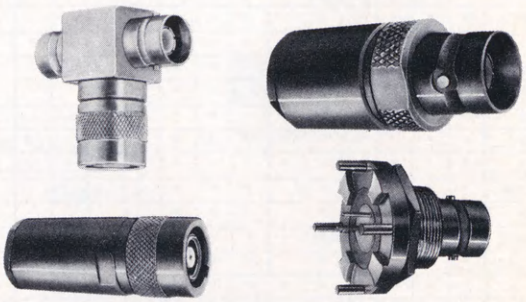
Patching available for quick re-routing or disconnect.

Rugged, dependable connectors.

See pages 37-39

### STANDARD 2-lug & 3-lug 80 Series
(TRC)

### STANDARD THREADED 380 Series
(TRN)



### 80/380 Series Features

Used in digital data bus, video pair, **MIL-STD-1553B** (primary/redundant data bus), **MIL-STD-1397** (shipboard data bus), base-band circuit and any application for "Noise Free Guarded" circuits.

Standard "C" sized concentric connectors.

Used with larger twinax/triax cables with other diameters of .250"-.615".

Does not require mechanical alignment for mating.

Requires no special tools while meeting former **MIL-C-49412/1 and /2** requirements.

See page 36

### MINIATURE 2-PIN POLARIZED 2-LUG 30 Series
(TWBNC)

### MINIATURE 2-PIN POLARIZED THREADED 330 Series
(TWTNC)

Same size as BNC/TNC connectors

Stepped Dielectric

Not recommended for new design.
Use Concentric designs.

See page 40



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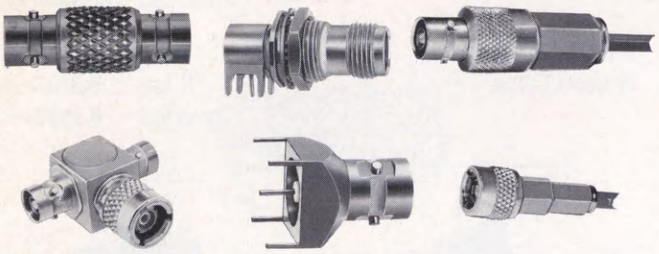
## SUBMINIATURE 2, 3 & 4-LUG & PUSH-ON
**150 Series** (TRS)

## SUBMINIATURE THREADED 3150 Series
(TTM)



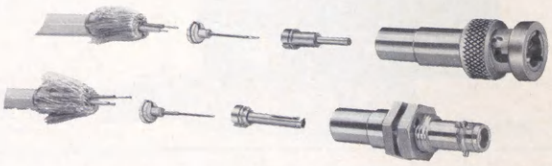
### 150/3150 Series Features

- Concentric Twinax connectors for high density and weight reduction applications.
- Used in digital data bus, video pair, **MIL-STD-1553B** (primary/redundant), base-band circuit and any application for "Noise Free Guarded" circuits.
- Meets 48-hour salt spray requirement **MIL-C-49142**.
- Special platings available to satisfy 500-hour salt spray requirement **MIL-STD 1344**.
- Fits **MIL-C17/176-00002** and other twinax/triax cables.
- Does not require mechanical alignment for mating.
- 3-lug, 4-lug and threaded versions for improved mechanical stability.
- Solderable Wrench Crimp version terminates twinax or triax cable up to .215" jacket diameter.
- All Tool Crimp versions for quick terminations of cables up to .246" jacket diameter.
- Only four (4) pieces to assemble.
- Push-on versions for rack & panel or test probe applications.
- Same size as BNC/TNC connectors.
- Patching available for quick re-routing or disconnect.
- Rugged, dependable connectors.

See Pages 41-43

## SUBMINIATURE 3-LUG & 4-LUG 450 Series

## SUBMINIATURE TWINAX THREADED 3450 Series



### 450/3450 Series Features

- Concentric connectors designed for **MIL-STD-1553B** airborn digital databus weight reduction applications.
- Fits **MIL-C17/176-00002** and other twinax/triax cables.
- Field installable Full Crimp design. No soldering required.
- Compatible with **Raychem** designs but utilizing military crimp tools. (Intermateable replacement)
- Special platings satisfy 500-hour salt spray requirement **MIL-STD-1344.**
- Weatherproof designs utilize sealing gaskets and heat shrink tubing.
- Inspectable assembly. No blind or questionable solder connections.
- 3-lug, 4-lug and threaded versions.
- Three (3) different keyings for 3-lug versions.
- Two (2) interchangeable pin and socket arrangements.
- Total of ten (10) different polarized and keyed combinations.
- Only four (4) pieces for assembly.

See Pages 44-45

## TWINAX CONTACTS FOR DIGITAL DATA BUS MULTIPIN CONNECTOR
#8 Cavity

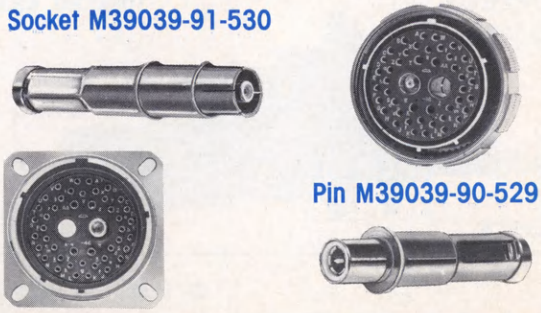
Socket QPL # M39029-91-530 **SPC 8S-201**
Pin QPL # M39029-90-529 **SPC 8P-201**

Mated pair "scoop-proof" concentric contacts to fit the #8 cavity of **MIL-C-38999 series 1, 3 & 4;** and **MIL-STD-1760** external "stores" type of connectors. Terminates **MIL-C17/176-0002** and other twinax/triax cables.

Heat treaded beryllium copper spring members

Gold plated Full Crimp contacts

**Socket M39039-91-530**



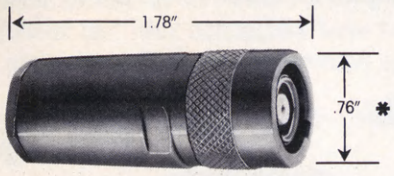
**Pin M39039-90-529**

# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Standard Twinax/Triax Threaded 80/380 Series, TRC/TRN

### CABLE PLUG

| | |
|---|---|
| 2-lug | PL80-△ |
| 3-lug | PL803-△ |
| Threaded | PL380-△ |

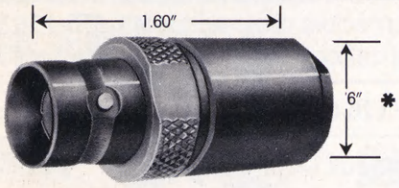



*1.00" Cable Groups 12, 14-16

ZIP-SHIP TROMPETER

### CABLE JACK

| | |
|---|---|
| 2-lug | CJ80-△ |
| 3-lug | CJ803-△ |
| Threaded | CJ380-△ |




*1.00" Cable Groups 12, 14-16

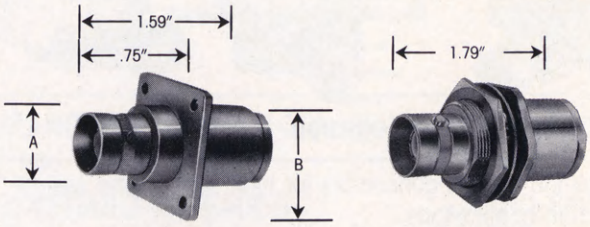
### BULKHEAD CABLE JACKS

**Flange Mounting**
Wrench Crimp

| | |
|---|---|
| 2-lug | BJ89F-△ |
| 3-lug | BJ893F-△ |
| Threaded | BJ389F-△ |

**D-Hole Mounting**
Wrench Crimp

| | |
|---|---|
| 2-lug | BJ89-△ |
| 3-lug | BJ893-△ |
| Threaded | BJ389-△ |




Square Hole Pattern

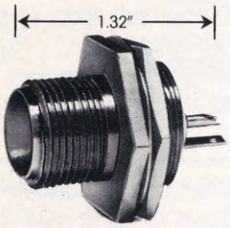
ZIP-SHIP TROMPETER

| | | | |
|---|---|---|---|
| DD6.250* | Cable Grp 7-14 | Flange A = .68" | B = .94" |
| D11.259* | Cable Grp 14A-16 | Flange A = .94" | B = .92" |

### BULKHEAD JACK

Solder pot

| | |
|---|---|
| 2-lug | BJ80 |
| 3-lug | BJ803 |
| Threaded | BJ380 |



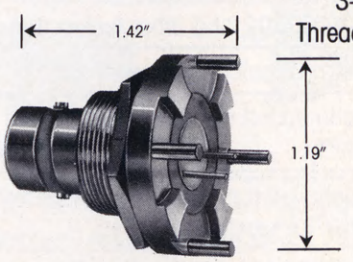

D1.133*

ZIP-SHIP TROMPETER

### CIRCUIT BOARD JACK

Solder pot

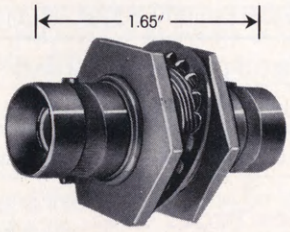
| | |
|---|---|
| 2-lug | CBBJ82 |
| 3-lug | CBBJ823 |
| Threaded | CBBJ382 |




### INSULATED FEED-THROUGH

Bulkhead Jack (BJ81 Equivalent)

| | |
|---|---|
| 2-lug | BJ83 |
| 3-lug | BJ833 |
| Threaded | BJ383 |



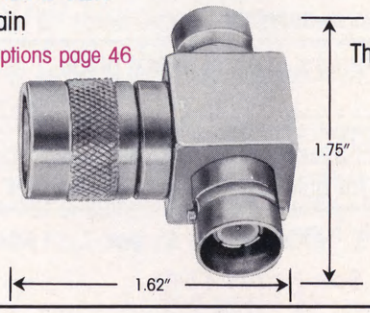

D1.343*

### TEE ADAPTER

No chain

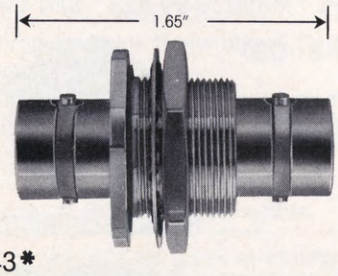
Chain options page 46

| | |
|---|---|
| 2-lug | BN83-1 |
| 3-lug | BN833-1 |
| Threaded | BN383-1 |




### FEED-THROUGH BULKHEAD JACK

| | |
|---|---|
| 2-lug | BJ88-△ |
| 3-lug | BJ883-△ |
| Threaded | BJ388-△ |




D1.343*

**Terminations & RFI Caps page 46**

**Custom Cable Assemblies page 6**

△- Cable Group # page 50, * Mounting Holes page 58



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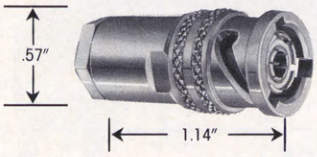
# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Miniature Plugs & Jacks 70/370 Series, TRB/TRT

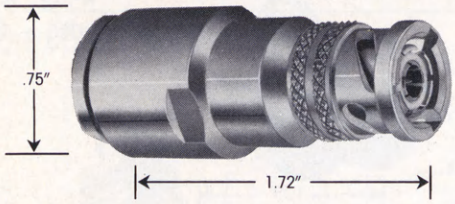
### CABLE PLUG
Wrench Crimp
Twinax/Triax cables with jacket dia. of .280″ to .50″

| | |
|---|---|
| 2-lug | PL74-△1 |
| 3-lug | PL75-△1 |
| 4-lug | PL75FL-△1 |
| Threaded | PL375-△1 |

**Standard Body**




**Large Body**

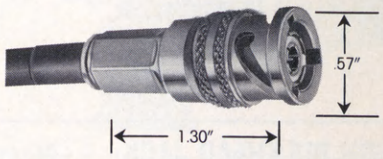



ZIP-SHIP TROMPETER

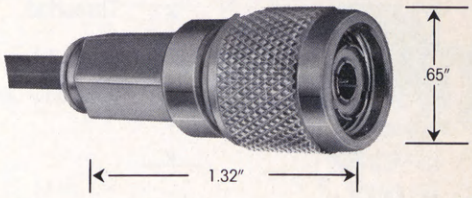
### CABLE PLUG
Tool Crimp
Twinax/Triax cables with jacket dia. of .280″ to .50″

| | |
|---|---|
| 2-lug | PL74C-△1 |
| 3-lug | PL75C-△1 |
| 4-lug | PL75CFL-△1 |
| Threaded | PL375C-△1 |

**3-Lug**



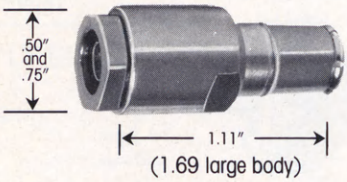

**Threaded**




ZIP-SHIP TROMPETER

### CABLE PLUG PUSH-ON
Wrench Crimp — PL73-△1

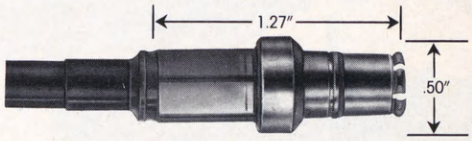
**Large body** - Cable groups 10 and up




(1.69 large body)

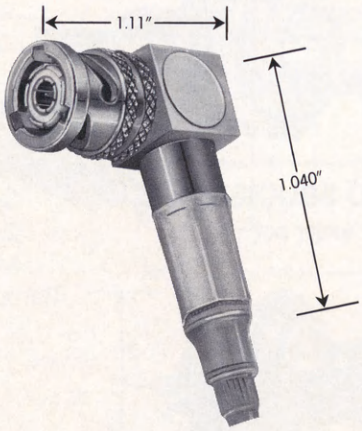
### CABLE PLUG PUSH-ON
Tool Crimp — PL73C-△1

**Standard body**



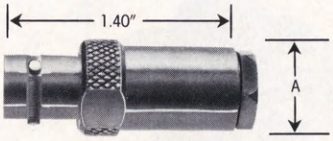

### RIGHT ANGLE CABLE PLUG
Tool Crimp
Cable Groups 201-223
See page 59

| | |
|---|---|
| 2-lug | PLR74C-△1 |
| 3-lug | PLR75C-△1 |
| 4-lug | PLR75CFL-△1 |
| Threaded | PL375C-△1 |




### CABLE JACK
Wrench Crimp
Standard body A = .57″
Large body A = .75″

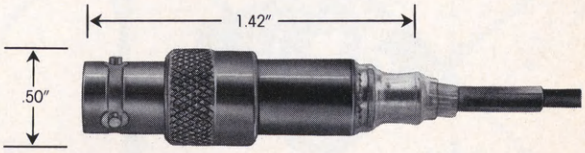
| | |
|---|---|
| 3-lug | CJ70-△1 |
| 3-lug | CJ70TL-△1 |
| 4-lug | CJ70FL-△1 |
| Threaded | CJ370-△1 |




ZIP-SHIP TROMPETER

### CABLE JACK
Tool Crimp

| | |
|---|---|
| 3-lug | CJ70C-△1 |
| 3-lug | CJ70CTL-△1 |
| 4-lug | CJ70CFL-△1 |
| Threaded | CJ370C-△1 |



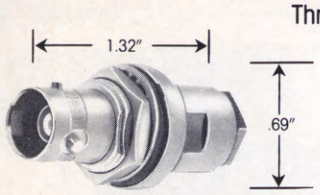

△1- Cable Group # page 50

# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Miniature Bulkhead Jacks 70/370 Series, TRB/TRT

### BULKHEAD CABLE JACK
Wrench Crimp

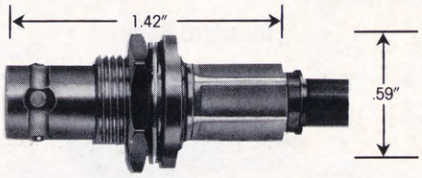
| | |
|---|---|
| 3-lug | BJ79-△ |
| 2-lug | BJ79TL-△ |
| 4-lug | BJ79FL-△ |
| Threaded | BJ379-△ |




D3.109*

### BULKHEAD CABLE JACK
Tool Crimp

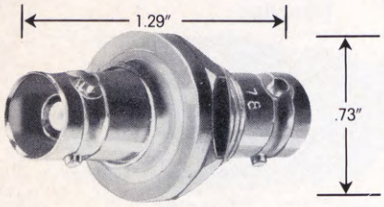
| | |
|---|---|
| 3-lug | BJ79C-△ |
| 2-lug | BJ79CTL-△ |
| 4-lug | BJ79CFL-△ |
| Threaded | BJ379C-△ |




D3.109*

### FEED-THROUGH BULKHEAD JACK

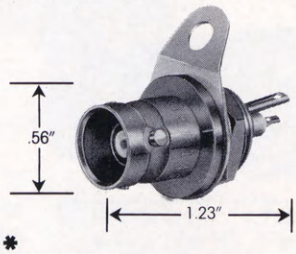
| | |
|---|---|
| 3-lug | BJ78 |
| 2-lug | BJ78TL |
| 4-lug | BJ78FL |
| Threaded | BJ378 |




D3.187*

### BULKHEAD JACK
Front Mount, Solder pot

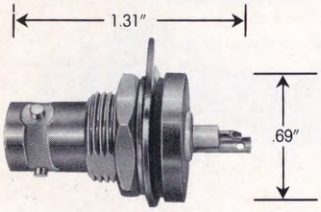
| | |
|---|---|
| 3-lug | BJ77 |
| 2-lug | BJ77TL |
| 4-lug | BJ77FL |
| Threaded | BJ377 |




D4.125*

### BULKHEAD JACK
Rear Mount, Solder pot

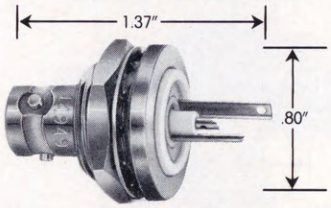
| | |
|---|---|
| 3-lug | BJ76 |
| 2-lug | BJ76TL |
| 4-lug | BJ76FL |
| Threaded | BJ376 |




D3.218*

### INSULATED BULKHEAD JACK
Rear Mount, Solder pot

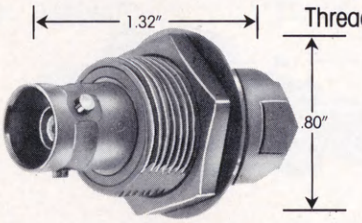
| | |
|---|---|
| 3-lug | BJ75 |
| 2-lug | BJ75TL |
| 4-lug | BJ75FL |
| Threaded | BJ375 |




D2.140*

### INSULATED BULKHEAD CABLE JACK Wrench Crimp

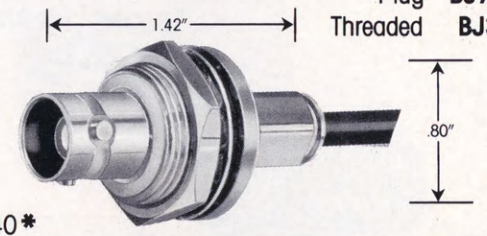
| | |
|---|---|
| 3-lug | BJ74-△ |
| 2-lug | BJ74TL-△ |
| 4-lug | BJ74FL-△ |
| Threaded | BJ374-△ |




D2.140*

### INSULATED BULKHEAD CABLE JACK Tool Crimp

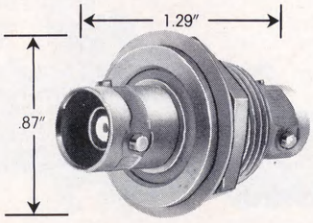
| | |
|---|---|
| 3-lug | BJ74C-△ |
| 2-lug | BJ74CTL-△ |
| 4-lug | BJ74CFL-△ |
| Threaded | BJ374C-△ |




D2.140*

### INSULATED FEED-THROUGH
Bulkhead Jack

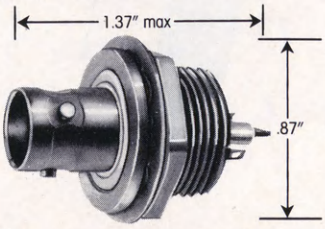
| | |
|---|---|
| 3-lug | BJ73 |
| 2-lug | BJ73TL |
| 4-lug | BJ73FL |
| Threaded | BJ373 |




D2.140*

### INSULATED BULKHEAD JACK
Front Mount, Solder pot

| | |
|---|---|
| 3-lug | BJ72 |
| 2-lug | BJ72TL |
| 4-lug | BJ72FL |
| Threaded | BJ372 |




D2.140*

△- Cable Group # page 50, * Mounting Holes page 58



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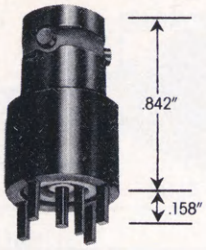
# TWINAX/TRIAX CONCENTRIC CONNECTORS

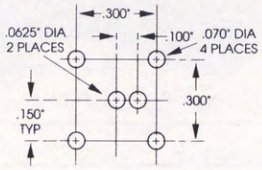
## Miniature Circuit Board Jacks 70/370 Series & Paralleling



### CIRCUIT BOARD JACK

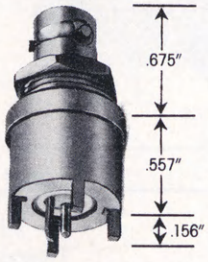
| | |
|---|---|
| 3-lug | CBJ70 |
| 2-lug | CBJ70TL |
| 4-lug | CBJ70FL |
| Threaded | CBJ370 |

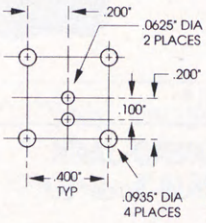



### CIRCUIT BOARD BULKHEAD JACK

| | |
|---|---|
| 3-lug | CBBJ79 |
| 2-lug | CBBJ79TL |
| 4-lug | CBBJ79FL |
| Threaded | CBBJ379 |

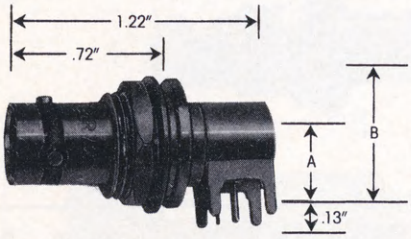


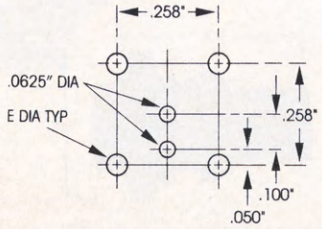




D3.109*

### RIGHT ANGLE CIRCUIT BOARD BULKHEAD JACKS

| | | |
|---|---|---|
| Standard Version | 3-lug | CBBJR79 |
| A = .240" | 2-lug | CBBJR79TL |
| B = .565" | 4-lug | CBBJR79FL |
| E = .063" | Threaded | CBBJR379 |
| Tall Version | 3-lug | CBBJR79A |
| A = .340" | 2-lug | CBBJR79TLA |
| B = .665" | 4-lug | CBBJR79FLA |
| E = .070" | Threaded | CBBJR379A |

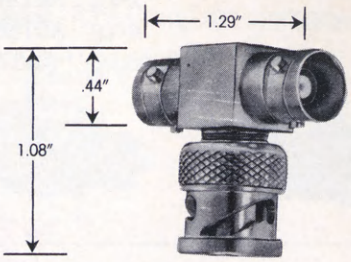



D3.125*

### TEE ADAPTER

| | |
|---|---|
| 3-lug | BN73 |
| 2-lug | BN73TL |
| 4-lug | BN73FL |
| Threaded | BN373 |



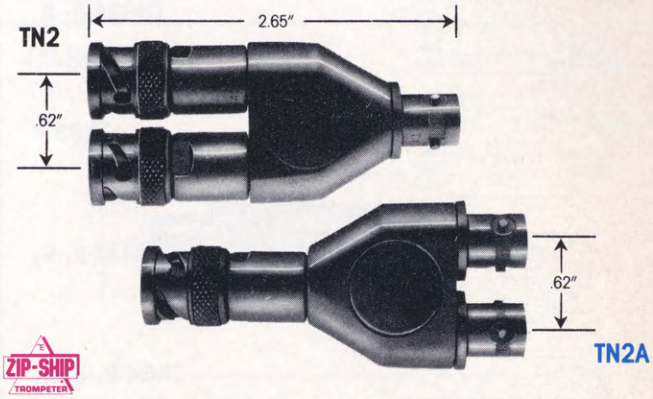

### FIXED PARALLELING JACK

Two plugs, One jack

| | |
|---|---|
| 3-lug | TN2 |
| 2-lug | TN2TL |
| 4-lug | TN2FL |
| Threaded | TN2T |

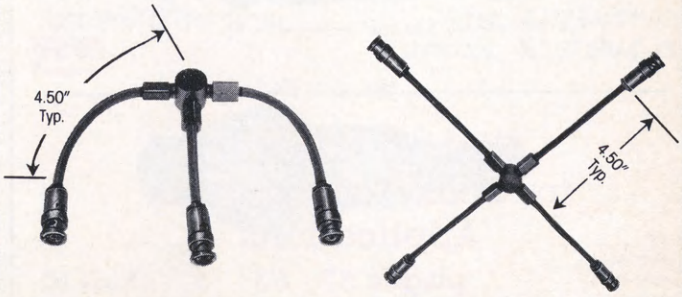
Two jacks, One plug

| | |
|---|---|
| 3-lug | TN2A |
| 2-lug | TN2TLA |
| 4-lug | TN2FLA |
| Threaded | TN2TA |




### RANDOM PARALLELING

| | | |
|---|---|---|
| Three plugs, No jacks | 3-lug | TN3-Z |
| | 2-lug | TN3TL-Z |
| For two plugs, One jack | 4-lug | TN3FL-Z |
| Add letter "A" | Threaded | TN3T-Z |
| Four plugs, No jack | 3-lug | TN4-Z |
| | 2-lug | TN4TL-Z |
| For three plugs, One jack | 4-lug | TN4FL-Z |
| Add letter "A" | Threaded | TN4T-Z |



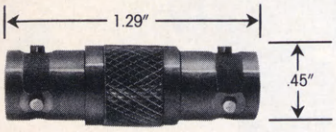

**R** - Resistance (.5 W 2%), **Z** - Impedance  Triax - 50Ω/75Ω  Twinax - 78Ω/124Ω, * Mounting Holes page 58

# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Miniature Adapters/Pads, 2-Pin Polarized 30/330 Series TWBNC/TWTNC

### COUPLING ADAPTER

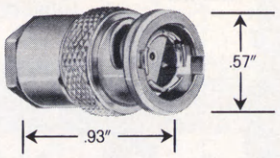
| | |
|---|---|
| 3-lug | AD78 |
| 2-lug | AD78TL |
| 4-lug | AD78FL |
| Threaded | AD378 |




ZIP-SHIP TROMPETER

### CABLE PLUG

| | |
|---|---|
| 2-lug | PL30-⚠ |
| Threaded | PL330-⚠ |

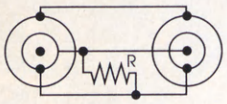



ZIP-SHIP TROMPETER

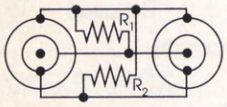
### TRB SERIES PAD

TRB 3-lug plug and jack

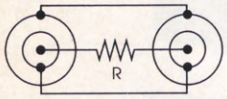
**Circuit Schematic**



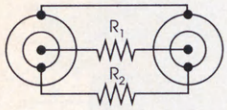

TNG2-R



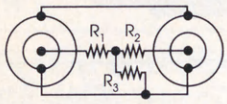

TNG2A-$R_1$-$R_2$



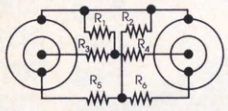

TNG3-R




TNG3A-$R_1$-$R_2$

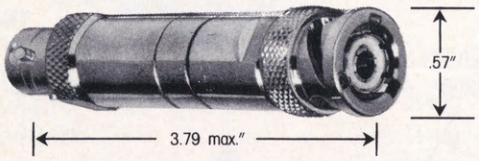



TNG4-$R_1$-$R_2$-$R_3$




TNG4-$R_1$-$R_2$-$R_3$-$R_4$-$R_5$-$R_6$

Substitute resistive value for each **R** unless all values are identical.

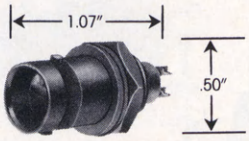



ZIP-SHIP TROMPETER

### BULKHEAD JACK

Front Mount, Solder pot

| | |
|---|---|
| 2-lug | BJ30 |
| Threaded | BJ330 |



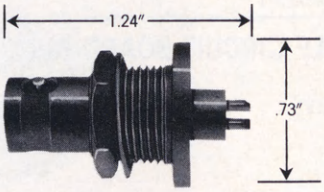

D5.125✱

ZIP-SHIP TROMPETER

### BULKHEAD JACK

Rear Mount, Solder pot

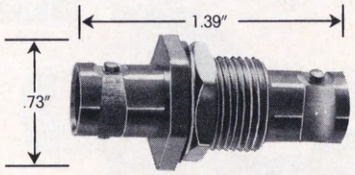
| | |
|---|---|
| 2-lug | BJ31 |
| Threaded | BJ331 |




D3.243✱

### FEED-THROUGH BULKHEAD JACK

| | |
|---|---|
| 2-lug | BJ38 |
| Threaded | BJ338 |



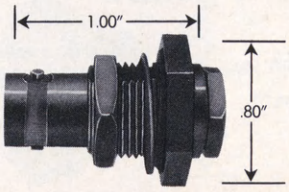

D3.171✱

ZIP-SHIP TROMPETER

### BULKHEAD CABLE JACK

Front Mount

| | |
|---|---|
| 2-lug | BJ39-⚠ |
| Threaded | BJ339-⚠ |




D3.218✱

**Custom Adapters for Coax/Twinax/Triax Applications pages 52 - 53**

⚠- Cable Group # page 50, **R** - Resistance (.5 W 2%), ✱ Mounting Holes page 58



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# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Subminiature Jacks & Plugs 150/3150 Series, TRS/TTM

Subminiature concentric twinax/triax **increase packing density up to 246%.** Designed for high density installations, Digital, Video pair and baseband circuits where "Noise Free Guarded" circuits are required. 3-lug, 4-lug and threaded versions improve mechanical stability and provide error free redundant data bus capability. Wrench Crimp for cables up to .215" jacket diameter. Tool Crimp for diameters to .246".

TRS BAYONET 3 LUG

TRS BAYONET 4 LUG

TTM THREADED

TRS/TTM PUSH-ON

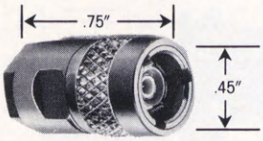
WRENCH CRIMP

TOOL CRIMP

See **"Military Applications"** page 5 and **"150/3150 Series Features"** page 35

### CABLE PLUG
Wrench Crimp

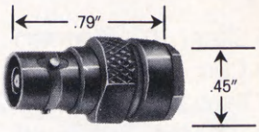
| | |
|---|---|
| 3-lug | PL155-⚠ |
| 4-lug | PL155FL-⚠ |
| Threaded | PL3155-⚠ |




ZIP-SHIP TROMPETER

### CABLE JACK
Wrench Crimp

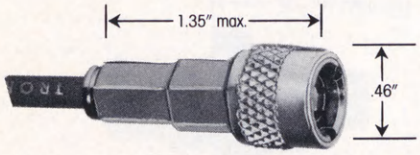
| | |
|---|---|
| 3-lug | CJ150-⚠ |
| 4-lug | CJ150FL-⚠ |
| Threaded | CJ3150-⚠ |




ZIP-SHIP TROMPETER

### CABLE PLUG
Tool Crimp

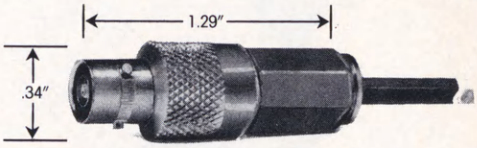
| | |
|---|---|
| 3-lug | PL155AC-⚠ |
| 4-lug | PL155ACFL-⚠ |
| Threaded | PL3155AC-⚠ |




ZIP-SHIP TROMPETER

### CABLE JACK
Tool Crimp

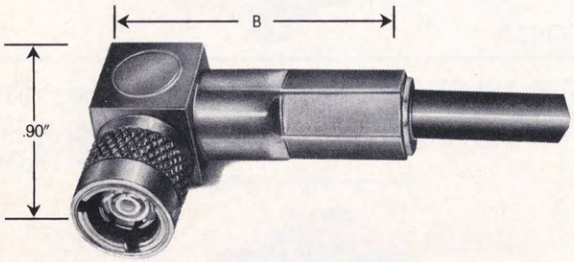
| | |
|---|---|
| 3-lug | CJ150AC-⚠ |
| 4-lug | CJ150ACFL-⚠ |
| Threaded | CJ3150AC-⚠ |




### RIGHT ANGLE CABLE PLUG
Tool Crimp

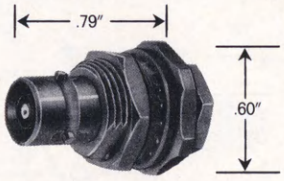
| | |
|---|---|
| 3-lug | PLR155AC-⚠ |
| 4-lug | PLR155ACFL-⚠ |
| Threaded | PLR3155AC-⚠ |

| | | |
|---|---|---|
| Cable Groups | 211-216 | B = 1.32" |
| All others | | B = 1.77" |




### BULKHEAD JACK
Rear Mount, Wrench Crimp

| | |
|---|---|
| 3-lug | BJ159-⚠ |
| 4-lug | BJ159FL-⚠ |
| Threaded | BJL3159-⚠ |

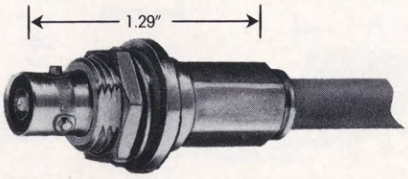



D4.125*

ZIP-SHIP TROMPETER

### BULKHEAD JACK
Rear Mount, Tool Crimp

| | |
|---|---|
| 3-lug | BJ159AC-⚠ |
| 4-lug | BJ159ACFL-⚠ |
| Threaded | BJL3159AC-⚠ |




D4.125*

ZIP-SHIP TROMPETER

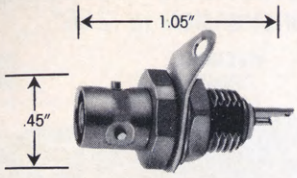
⚠- Cable Group # page 50, * Mounting Holes page 58, Tools page 51

# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Subminiature Bulkhead Jacks 150/3150 Series TRS/TTM

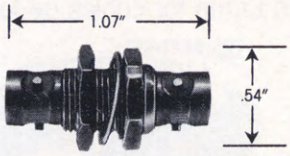
### CABLE PLUG
Solder pot

3-lug **BJ157**
4-lug **BJ157FL**
Threaded **BJ3157**




D6.187*

### FEED-THROUGH BULKHEAD JACK
3-lug **BJ158**
4-lug **BJ158FL**
Threaded **BJ3158**

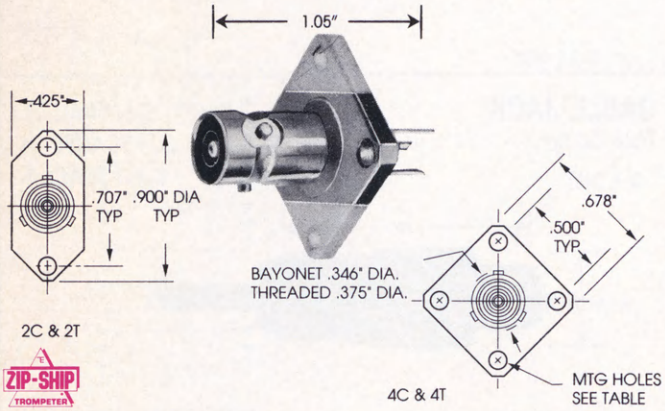



D5.171*
D4.171* Threaded

### BULKHEAD JACKS
Flange Mount, Solder pot

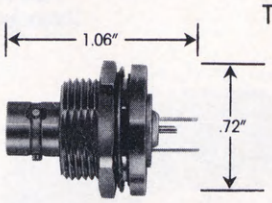
3-lug **BJ157F-△2**
4-lug **BJ157FFL-△2**
Threaded **BJ3157F-△2**

△2-Hole Configuration #
- 2C-Two Clear (.103" diameter)
- 4C-Four Clear (.103" diameter)
- 2T-Two Threaded (.099-56UNF-2B)
- 4T-Four Threaded (.099-56UNF-2B)




### INSULATED BULKHEAD JACK
Rear Mount, Solder pot

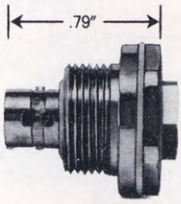
3-lug **BJ155**
4-lug **BJ155FL**
Threaded **BJ3155**




D9.148*

### INSULATED BULKHEAD JACK
Rear Mount, Wrench Crimp

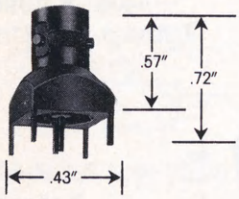
3-lug **BJ154-△1**
4-lug **BJ154FL-△1**
Threaded **BJ3154-△1**

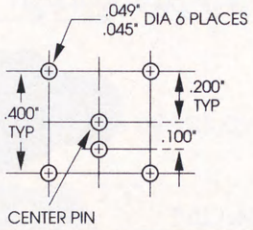



D9.166*

### CIRCUIT BOARD JACK

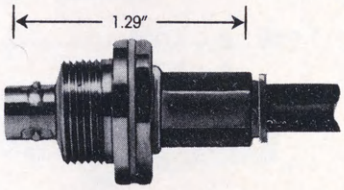
3-lug **CBJ157**
4-lug **CBJ157FL**
Threaded **CBJ3157**




### INSULATED BULKHEAD JACK
Rear Mount, Tool Crimp

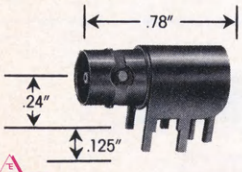
3-lug **BJ154AC-△1**
4-lug **BJ154ACFL-△1**
Threaded **BJ3154AC-△1**

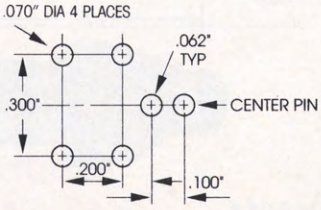



D9.166*

### RIGHT ANGLE CIRCUIT BOARD JACK

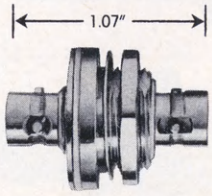
3-lug **CBJR157**
4-lug **CBJR157FL**
Threaded **CBJR3157**




### FEED-THROUGH INSULATED BULKHEAD JACK

3-lug **BJ153**
4-lug **BJ153FL**
Threaded **BJ3153**




D9.166*

△1- Cable Group # page 50, * Mounting Holes page 58, Tools page 51

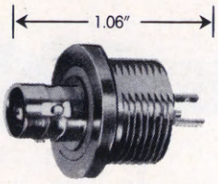

TROMPETER ELECTRONICS, INC. (818) 707-2020 • FAX (818) 706-1040

# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Subminiature Bulkhead Jacks, Adapters & Push-on 150/3150 Series

### INSULATED BULKHEAD JACK
Front Mount, Solder pot

| | |
|---|---|
| 3-lug | BJ152 |
| 4-lug | BJ152FL |
| Threaded | BJ3152 |



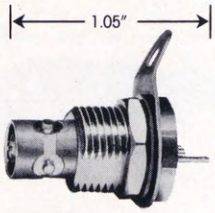

D9.208*

**TRS/TTM Push-on connectors** are designed for blind mate rack and panel applications. The Male plugs mate with any TRS/TTM jack and are ideally suited for test probe applications.

See page 29 for diagram of typical application.

### BULKHEAD JACK
Rear Mount, Solder pot

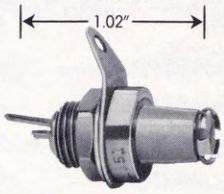
| | |
|---|---|
| 3-lug | BJ150 |
| 4-lug | BJ150FL |
| Threaded | BJ3150 |




D4.218*

### BULKHEAD PUSH-ON PLUG
Front Mount, Solder pot

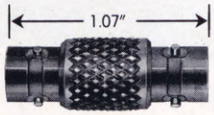
PL151




C1.088*

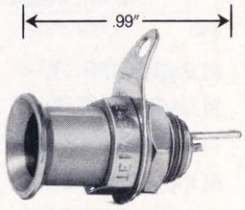
### COUPLING ADAPTER

| | |
|---|---|
| 3-lug | AD158 |
| 4-lug | AD158FL |
| Threaded | AD3158 |




### BULKHEAD PUSH-ON JACK
Front Mount, Solder pot

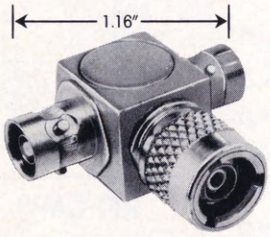
BJ151




C1.063*

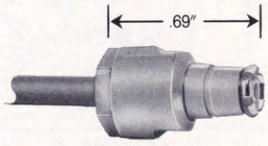
### TEE ADAPTER

| | |
|---|---|
| 3-lug | BN153 |
| 4-lug | BN153FL |
| Threaded | BN3153 |




### PUSH-ON CABLE PLUG
Wrench Crimp

PL153-△



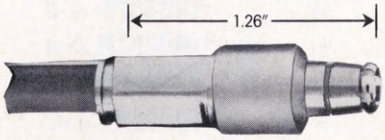

**Terminations & RFI Caps**
Page 46

**Custom Cable Assemblies**
Page 6

**Custom Loaded Panels**
Page 54

### PUSH-ON CABLE PLUG
Tool Crimp

PL153AC-△




△- Cable Group # page 50, * Mounting Holes page 58

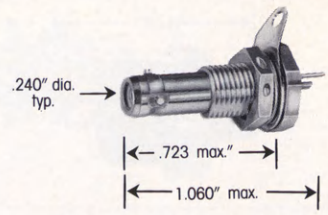
# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Concentric Twinax 450 Series

### BULKHEAD JACK, SOLDER POT, REAR MOUNTING

DD8.130, DD8.125-Threaded Mounting Holes page 58

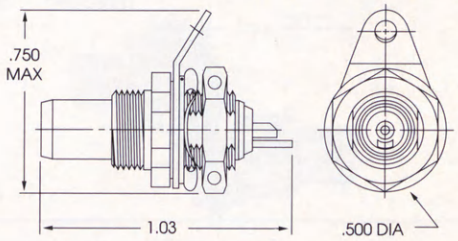
| Connector Type | Key Code | Intermediate Contact Pin | Intermediate Contact Socket |
|---|---|---|---|
| 3-Lug | P | BJ450PP | BJ450PS |
| 3-Lug | R | BJ450RP | BJ450RS |
| 3-Lug | W | BJ450WP | BJ450WS |
| 4-Lug | FL | BJ450FLP | BJ450FLS |
| Threaded | | BJ3450P | BJ3450S |




### BULKHEAD JACK, SOLDER POT, FRONT MOUNTING

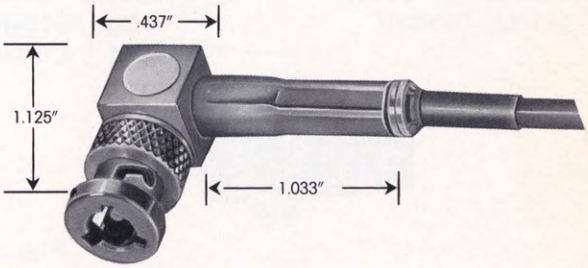
DD8.130, DD8.125-Threaded Mounting Holes page 58

| Connector Type | Key Code | Intermediate Contact Pin | Intermediate Contact Socket |
|---|---|---|---|
| 3-Lug | P | BJ457PP | BJ457PS |
| 3-Lug | R | BJ457RP | BJ457RS |
| 3-Lug | W | BJ457WP | BJ457WS |
| 4-Lug | FL | BJ457FLP | BJ457FLS |
| Threaded | | BJ3457P | BJ3457S |



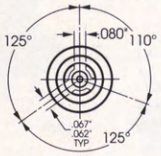

### RIGHT ANGLE CABLE PLUG, ALL CRIMP

| Connector Type | Key Code | Intermediate Contact Pin | Intermediate Contact Socket |
|---|---|---|---|
| Lug | P | PLR455ACPP-△ | PLR455ACPS-△ |
| 3-Lug | R | PLR455ACRP-△ | PLR455ACRS-△ |
| 3-Lug | W | PLR455ACWP-△ | PLR455ACWS-△ |
| 4-Lug | FL | PLR455ACFLP-△ | PLR455ACFLS-△ |
| Threaded | | PLR3455ACP-△ | PLR3455ACS-△ |




The **450 Series** includes 3-lug versions with three (3) separate keyings, a 4-lug and a threaded version. Cable connectors accept cables with a **maximum O.D. of .180"** and **conductors to .025"**.

P

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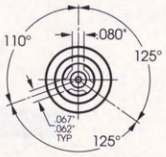
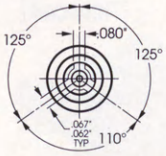
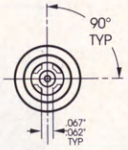



W




FL




### TERMINATIONS

△- Chain # see page 46

### RFI CAPS

| Connector Type | Key Code | Intermediate Contact Pin | Intermediate Contact Socket | Mounting Hole | RFI CAP |
|---|---|---|---|---|---|
| In-line Lug | P | TNG451P-△-R | TNG451S-△-R | | RFI455-△ |
| In-line 3-Lug | R | TNG451P-△-R | TNG451S-△-R | | RFI455-△ |
| In-line 3-Lug | W | TNG451P-△-R | TNG451S-△-R | | RFI455-△ |
| In-line 4-Lug | FL | TNG451FL△-R | TNG451FLS-△-R | | RFI455FL-△ |
| In-line Threaded | | TNG3451P-△-R | TNG3451S-△-R | | RFI3455-△ |
| Bulkhead Lug | P | TBJ451P-△-R | TBJ451S-△-R | DD8.156 | RFI455-△ |
| Bulkhead 3-Lug | R | TBJ451P-△-R | TBJ451S-△-R | DD8.156 | RFI455-△ |
| Bulkhead 3-Lug | W | TBJ451P-△-R | TBJ451S-△-R | DD8.156 | RFI455-△ |
| Bulkhead 4-Lug | FL | TBJ451FLP-△-R | TBJ451FLS-△-R | DD8.156 | RFI455FL-△ |
| Bulkhead Threaded | | TBJ3451P-△-R | TBJ3451S-△-R | DD8.125 | RFI3455-△ |



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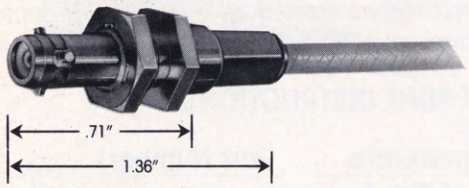
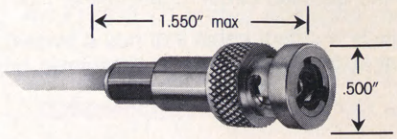
# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Concentric Twinax 450 Series

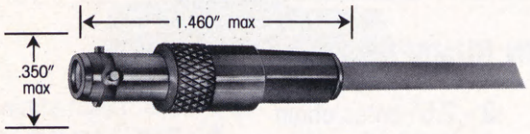
### BULKHEAD CABLE JACK FRONT MOUNT, ALL CRIMP




### CABLE PLUG, ALL CRIMP




### CABLE JACK, ALL CRIMP




### CONTACT ASSEMBLIES

Pin/Socket PS450AC-△

Socket/Pin SP450AC-△

### BULKHEAD CABLE JACK, ALL CRIMP, REAR MOUNTING

DD8.156, DD8.125-Threaded
Mounting Holes page 58

| Connector Type | Key Code | Intermediate Contact Pin | Intermediate Contact Socket | Body Assembly |
|---|---|---|---|---|
| 3-Lug | P | BJ459ACPP-△ | BJ459ACPS-△ | BJ459ACP-△ |
| 3-Lug | R | BJ459ACRP-△ | BJ459ACRS-△ | BJ459ACR-△ |
| 3-Lug | W | BJ459ACWP-△ | BJ459ACWS-△ | BJ459ACW-△ |
| 4-Lug | FL | BJ459ACFLP-△ | BJ459ACFLS-△ | BJ459ACFL-△ |
| Threaded | | BJ3459ACP-△ | BJ3459ACS-△ | BJ3459AC-△ |

### CABLE JACK, ALL CRIMP

| Connector Type | Key Code | Intermediate Contact Pin | Intermediate Contact Socket | Body Assembly |
|---|---|---|---|---|
| 3-Lug | P | CJ450ACPP-△ | CJ450ACPS-△ | CJ450ACP-△ |
| 3-Lug | R | CJ450ACRP-△ | CJ450ACRS-△ | CJ450ACR-△ |
| 3-Lug | W | CJ450ACWP-△ | CJ450ACWS-△ | CJ450ACW-△ |
| 4-Lug | FL | CJ450ACFLP-△ | CJ450ACFLS-△ | CJ450ACFL-△ |
| Threaded | | CJ3450ACP-△ | CJ3450ACS-△ | CJ3450AC-△ |

### CABLE PLUG, ALL CRIMP

| Connector Type | Key Code | Intermediate Contact Pin | Intermediate Contact Socket | Body Assembly |
|---|---|---|---|---|
| 3-Lug | P | PL455ACPP-△ | PL455ACPS-△ | PL455ACP-△ |
| 3-Lug | R | PL455ACRP-△ | PL455ACRS-△ | PL455ACR-△ |
| 3-Lug | W | PL455ACWP-△ | PL455ACWS-△ | PL455ACW-△ |
| 4-Lug | FL | PL455ACFLP-△ | PL455ACFLS-△ | PL455ACFL-△ |
| Threaded | | PL3455ACP-△ | PL3455ACS-△ | PL3459AC-△ |

△- Cable Group # page 50

# TWINAX/TRIAX CONCENTRIC CONNECTORS

## Quadrax 100 Series & Twinax/Triax Terminations & RFI Caps

### QUADRAX CONNECTORS

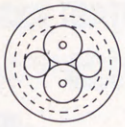
Quadrax connectors were designed for the ultimate in protected and guarded circuit applications.

Quadrax cable is a signal cable that has a twisted pair of signal wires with two separate and insulated braids.

See "Quadrax Guarded Circuit" in Appendix A.

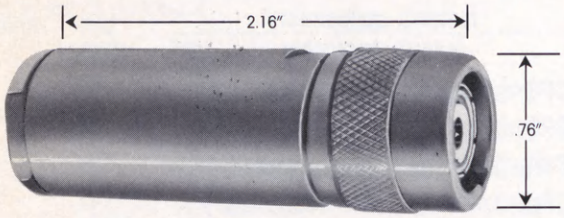
The two-lug connectors shown are concentric, do not require mechanical alignment for mating, and accept TEI quadrax cable type QRC-78-2.

QUADRAX



SEE PAGE 60 FOR CABLE SPECIFICATIONS

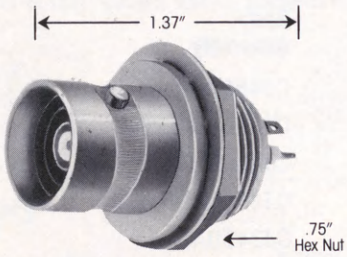
### CABLE PLUG — PL101-⚠




ZIP-SHIP TROMPETER

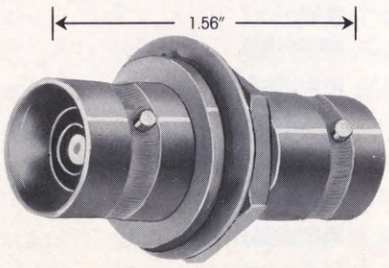
### BULKHEAD JACK — BJ101

Solder pot




D2.187*

### FEED-THROUGH BULKHEAD JACK — BJ102




D2.187*

⚠- Cable Group # page 50 * Mounting Holes page 58

### TWINAX/TRIAX TERMINATIONS & RFI CAPS

Trompeter provides Termination and RFI cap versions of many of our connectors. Resistors are normally **.125 watt for subminiature** connectors and **.500 watt for miniature and standard size** connectors with **2% tolerances for all.**

### ORDERING INSTRUCTIONS:

**For Terminations:** **Part Number*** - ____ - ____
Chain # _____
Resistance _____

**For RFI Caps:** **Part Number*** - ____
Chain # _____

### CHAIN NUMBERS:

**1** - No chain
**2** - 2.5" brass chain
**3** - 2.5" nylon chain
**4** - 3.0" brass chain
**5** - 3.0" nylon chain
**6** - 6.0" brass chain
**7** - 6.0" nylon chain

*For 2-lug & 4-lug versions call factory

**Terminations**

ZIP-SHIP TROMPETER

| Page | Termination Description | Mating Part | Part Number |
|---|---|---|---|
| 37 | PL75 Plug | TRB jacks | TNG1 |
| 38 | BJ79 Jack | TRB plugs | TNBGJ1 |
| 40 | BJ30 Jack | PL30 plugs | TNGBJT1 |
| 36 | PL80 plug | TRC jacks | TNGL1 |
| 41 | PL155 plug | TRS jacks | TNGM1 |
| 40 | PL30 plug | 2-pin jacks | TNGT1 |
| 37 | PL375 plug | TRT jacks | TNT1 |
| 37 | CJ370 jack | TRT plugs | TNTF1 |
| 41 | PL3155 plug | TTM jacks | TNTM1 |
| 48 | J150 jack | TRS plugs | TJTWM |
| 47 | PL71 plug | J72 jacks | TPT |
| 41 | PL150 plug | TRS jacks | TPTWM |

| Page | Termination Description | Mating Part | Part Number |
|---|---|---|---|
| 47 | J72 | Patch plug | RFI70 |
| 38 | BJ77 | PL75 plug | RFI75 |
| 37 | PL75 | BJ77 jack | RFI77 |
| 36 | BJ80 | PL80 plug | RFI85 |
| 48 | J150 | Subminiature patch plug | RFI150 |
| 31 | BJ50 | TPS Twinax/Triax plug | RFI155 |
| 38 | BJ377 | PL75 threaded plug | RFI375 |
| 37 | PL375 | BJ77 threaded plug | RFI377 |
| 31 | BJ3150 | TPS threaded plug | RFI3155 |

# TWINAX/TRIAX CONCENTRIC PATCHING

## Standard Patch Plugs, Jacks, Cords & Cable assemblies



### PATCH PLUG

PL71-△
With bend relief PL71BR

ZIP-SHIP TROMPETER

### TWINAX/TRIAX PATCH CORDS & CABLE ASSEMBLIES

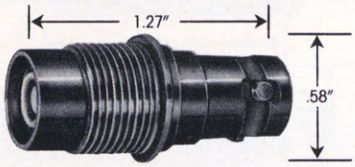
Standard cable lengths are **6", 12", 18", 24" & 36"**
TRB 2-lug, 4-lug and Threaded versions available

**Custom Coax/Twinax/Triax Cable Assemblies: Page 6**

**Panels: Pages 55-57**

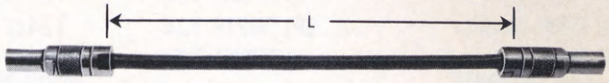
### PATCH JACK

J70
Threaded .5-28 UNEF




### PATCH CORD

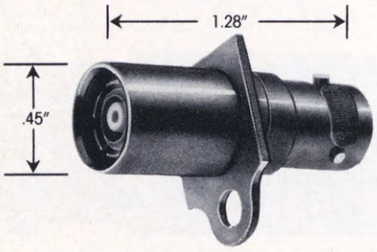
Twinax PTW-L-Z
Triax PTR-L-Z
Patch plug to patch plug




ZIP-SHIP TROMPETER

### PATCH JACK

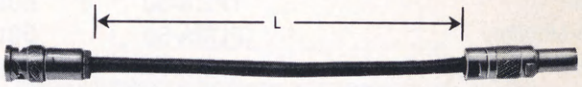
J72
Rear access TRB 3-lug




ZIP-SHIP TROMPETER

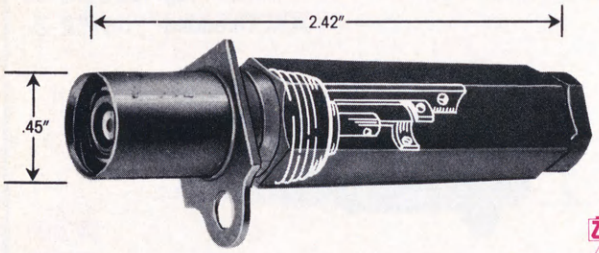
### CABLE ASSEMBLY

Twinax PTWX-L-Z
Triax PTRX-L-Z
TRB 3-lug plug to patch plug




### PATCH JACK SHIELDED

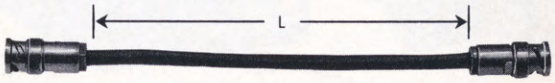
With hood J72D
Without hood J72S




ZIP-SHIP TROMPETER

### CABLE ASSEMBLY

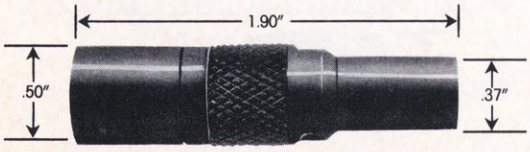
Twinax PTWY-L-Z
Triax PTRY-L-Z
TRB 3-lug plugs
Bend relief available




ZIP-SHIP TROMPETER

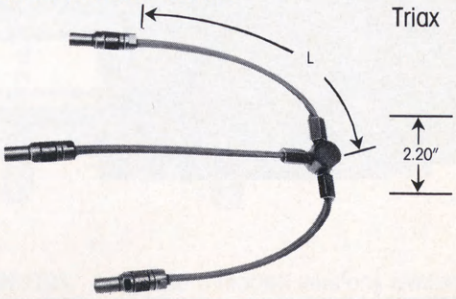
### RFI PATCH PLUG CAP
### TERMINATED PATCH PLUG

RFI 70-1
TPT-1-R
No chain. Chain options page 48




### PARALLEL PATCH CORD

Twinax PTWS-L-Z
Triax PTRS-L-Z




△- Cable Group # page 50, **L** - Length in inches, **R** - Resistance (.5 W 2%), **Z** - Impedance, Panels pages 55-57

# TWINAX/TRIAX CONCENTRIC PATCHING

## Standard Looping Plugs, Subminiature Patch Plugs & Jacks

### LOOPING PLUGS

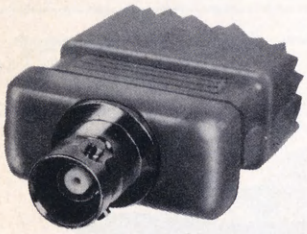
| Standard Handle Twinax | A = .625″ B = .625″ | |
|---|---|---|
| Plain | LPTW-78 | 78Ω |
| Test Point Monitor | LPTW2TP-78 | 78Ω |
| TRB Monitor | LPTWA-78 | 78Ω |
| Plain | LPTW-124 | 124Ω |
| Test Point Monitor | LPTW2TP-124 | 124Ω |
| TRB Monitor | LPTWA-124 | 124Ω |

| Wide Handle Twinax | A = 1.00″ B = 1.57″ | |
|---|---|---|
| Plain | LPLTW-78 | 75Ω |
| Test Point Monitor | LPLTW2TP-78 | 75Ω |
| TRB Monitor | LPLTWA-78 | 75Ω |
| Plain | LPLTW-124 | 124Ω |
| Test Point Monitor | LPLTW2TP-124 | 124Ω |
| TRB Monitor | LPLTWA-124 | 124Ω |

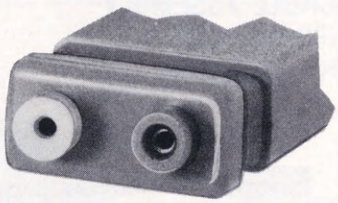
| Standard Handle Triax | A = .625″ B = 1.20″ | |
|---|---|---|
| Plain | LPTR-50 | 50Ω |
| TRB Monitor | LPTRA-50 | 50Ω |
| Plain | LPTR-75 | 75Ω |
| TRB Monitor | LPTRA-75 | 75Ω |

| Wide Handle Triax | A = 1.00″ B = 1.57″ | |
|---|---|---|
| Plain | LPLTR-50 | 50Ω |
| TRB Monitor | LPLTRA-50 | 50Ω |
| Plain | LPLTR-75 | 75Ω |
| TRB Monitor | LPLTRA-75 | 75Ω |

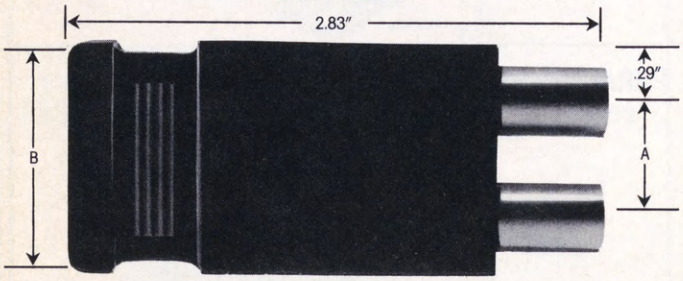
TRB Monitor



Test Point Monitor



Plain Handle

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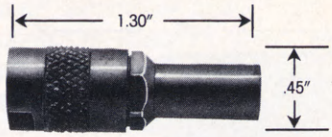
### PATCH PLUG

PL150-⚠



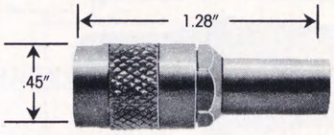

ZIP-SHIP TROMPETER

### RFI PATCH PLUG CAP

RFI 150-1

No chain

Chain options page 46

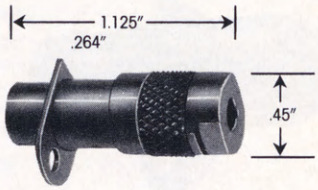



### PATCH JACK

J150-⚠

Cable Entry

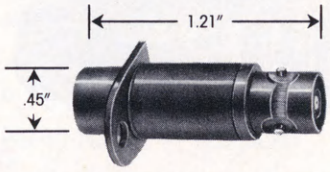
JSIX panels page 58




ZIP-SHIP TROMPETER

### PATCH JACK

TRS 3-lug J152-⚠
TRS 4-lug J152FL-⚠
TCM Threaded J3152-⚠



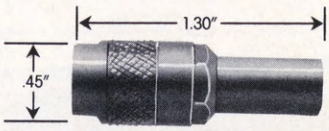

ZIP-SHIP TROMPETER

### TERMINATED PATCH PLUG

TPTWM-1-R

No chain

Chain options page 46




**R** - Resistance (.5 W 2%), Panels page 58



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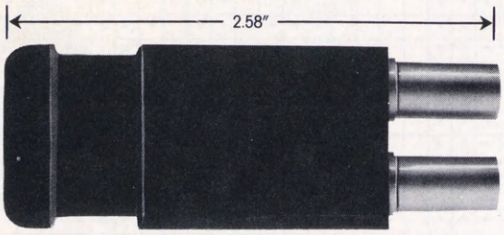
# TWINAX/TRIAX CONCENTRIC PATCHING

## Subminiature Looping Plugs, Patch Cords & Cable Assemblies

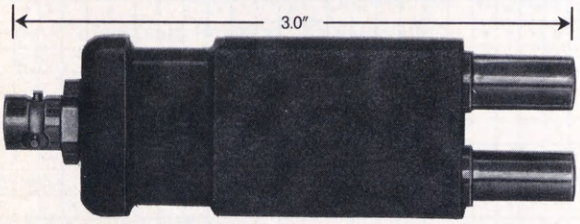
### SUBMINIATURE LOOPING PLUGS

| Handle | Type | |
|---|---|---|
| Yellow | Triax 50Ω, 75Ω | LPTRM-Z |
| Blue | Twinax 78Ω, 124Ω | LPTWM-Z |
| Blue TRS Jacks | Twinax 78Ω, 124Ω | LPTWMA-Z |
| Blue Test Point | Twinax 78Ω, 124Ω | LPTWM2TP-Z |

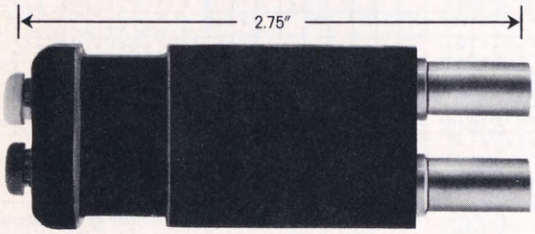
**Plain Handle**




**TRS Jacks**



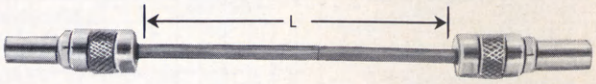

**Test Point**




### PATCH CORD

Subminiature Patch plug to patch plug

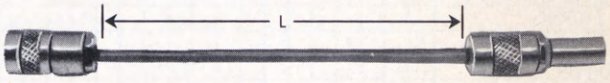
Triax 50Ω, 75Ω, **PTRM-L-Z**
Twinax 78Ω, 124Ω, **PTWM-L-Z**




### CABLE ASSEMBLY

Subminiature Patch plug to TRS* 3-lug plug

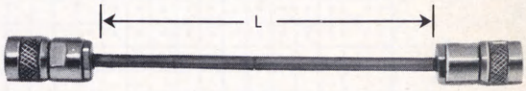
Triax 50Ω, 75Ω, **PTRMX-L-Z**
Twinax 78Ω, 124Ω, **PTWMX-L-Z**




### CABLE ASSEMBLY

TRS* 3-lug plug to TRS* 3-lug plug

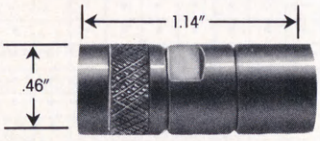
Triax 50Ω, 75Ω, **PTRMY-L-Z**
Twinax 78Ω, 124Ω, **PTWMY-L-Z**




### TERMINATION PLUG

**TNGM1-1-R**

TRS* 3-lug plug
No chain, Chain options page 46

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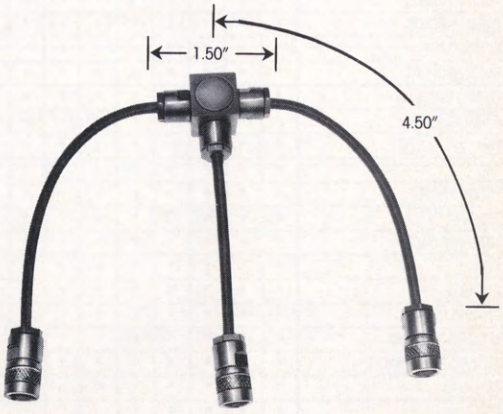
### RANDOM PARALLELING

**TNM3-Z**

Twinax 78Ω, 124Ω
Triax 50Ω, 75Ω
TRS* 3-lug plugs,
Metal junction




**TRB/TRS* 4-lug and threaded versions available**

**Additional Terminations & RFI Caps page 46**

**Custom Patch Cords & Cable Assemblies made with Trompeter components page 6**

⚠- Cable Group # page 50, **L** - Length in inches, **R** - Resistance (.5 W 2%), **Z** - Cable Impedance

# CONNECTOR/CABLE COMPATIBILITY TABLES

## Twinax/Triax/Quadrax "Wrench Crimp" Connectors

• - Connector available for that cable group.

| PAGE | CONNECTOR | CABLE GROUP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 7 | 7A | 8 | 9 | 10 | 11 | 12 | 13 | 13A | 14 | 14A | 15 | 16 | 17 | 23 | 24 | 24A | 25 | 25A | 26 | 27 | 28 | 29 | 30 | 32 | 33 | 35 | 38 | 39 | 40 | 42 | 43 | 45 | 46 | 47 | 49 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 64 | | | BR |
| 40 | BJ39 | | | | • | | | | | | | | | | | | | | • | | | • | | • | | | | | | | | | | | | • | • | | | | | | | | | | | | | N |
| 38 | BJ74/BJ74FL/BJ74TL | • | | | • | | | | | | | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | | • | • | | • | • | • | • | • | • | | | • | | | Y |
| 38 | BJ79/BJ79FL/BJ79TL | • | | | • | | | | | | | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | | • | • | | • | • | • | • | • | • | | | • | | | Y |
| 36 | BJ89/BJ89F | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | | | | | | • | | | • | | | | | | | | | | • | • | | | | N |
| 42 | BJ154/BJ154FL | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | • | | | • | • | | | • | • | • | | | | | | | | N |
| 41 | BJ159/BJ159FL | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | • | | | • | • | | | • | • | • | | | | | | | | N |
| 38 | BJ374 | • | | | • | | | | | | | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | | • | • | | • | • | • | • | | • | | • | | | | Y |
| 38 | BJ379 | • | | | • | | | | | | | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | | • | • | | • | • | • | • | • | • | | • | | | | Y |
| 36 | BJ389/BJ389F | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | | | | | | • | | | • | | | • | | | | | | | • | • | | | | N |
| 36 | BJ893/BJ893F | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | | | | | | • | | | • | | | • | | | | | | | • | • | | | | N |
| 42 | BJ3154 | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | | | | • | • | | | • | • | • | | | | | | | | N |
| 41 | BJ3159 | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | | | | • | • | | | • | • | • | | | | | | | | N |
| 37 | CJ70/CJ70FL/CJ70TL | • | | • | • | • | • | • | • | • | • | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | • | • | • | • | • | • | • | • | | • | | | • | | | Y |
| 36 | CJ80 | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | | | | | | • | | | • | | | • | | | | | | | • | • | | | | N |
| 41 | CJ150/CJ150FL | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | • | | | • | • | | | • | • | • | | | | | | | | N |
| 37 | CJ370 | • | | • | • | • | • | • | • | • | • | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | • | • | • | • | • | • | • | • | | • | | | • | | | N |
| 36 | CJ380 | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | | | | | | • | | | • | | | • | | | | | | | • | • | | | | N |
| 36 | CJ803 | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | | | | | | • | | | • | | | • | | | | | | | • | • | | | | N |
| 41 | CJ3150 | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | • | | | • | • | | | • | • | • | | | | | | | | N |
| 47 | J72S | • | | | • | | | | | | | | | | | • | | | | | | | | • | | • | • | • | | | | | | | | • | | | | | | | | | | | | | | N |
| 48 | J150 | | | | | | | | | | | | | | | | | | | | | | | • | | • | • | | | | | | | | | • | | | | | | | | | | | | | | N |
| 40 | PL30 | | | • | • | • | • | • | | | | | | | | | | | • | | | • | | • | | | | | | | | | | | • | • | • | | | | | | | | | | | | | N |
| 47 | PL71 | • | • | | • | | | | | | | | | | | • | | | | | | | | • | | | | | | | | • | | | | • | | | | | | | | | | | | | | Y |
| 37 | PL73 | • | | • | • | • | • | • | • | • | • | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | | | • | | | Y |
| 37 | PL74 | • | | • | • | • | • | • | • | • | • | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | | | • | | | Y |
| 36 | PL75/PL75FL | • | | • | • | • | • | • | • | • | • | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | | | • | | | Y |
| 46 | PL80 | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | • | | | | | • | | | • | | | • | | | | | | | • | • | | | | N |
| 48 | PL101 | | | | | | | | | | | | | | • | | | | | | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | | N |
| 43 | PL150 | | | | | | | | | | | | | | | | | | | | | | | • | | • | • | | | | | | | | | • | | | | | | | | | | | | | | N |
| 41 | PL153 | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | • | | | • | • | | | • | • | • | | | | | | | | N |
| 37 | PL155/PL155FL | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | • | | | • | • | | | • | • | • | | | | | | | | N |
| 36 | PL375 | • | | • | • | • | • | • | • | • | • | | | | | • | • | • | • | • | • | • | | • | • | • | • | | | | | • | • | • | • | • | • | • | • | • | • | • | • | • | | | • | | | Y |
| 36 | PL380 | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | | | | | | • | | | • | | | • | | | | | | | • | • | | | | N |
| 41 | PL803 | • | | • | • | • | • | • | • | • | • | • | • | • | | | | | | | • | | | • | | • | | | | | | • | | | • | | | • | | | | | | | • | • | | | | N |
| 41 | PL3155 | | | | | | | | | | | | | | | • | • | • | | | | • | | • | • | • | • | | | | | | • | | | • | • | | | • | • | • | | | | | | | | N |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

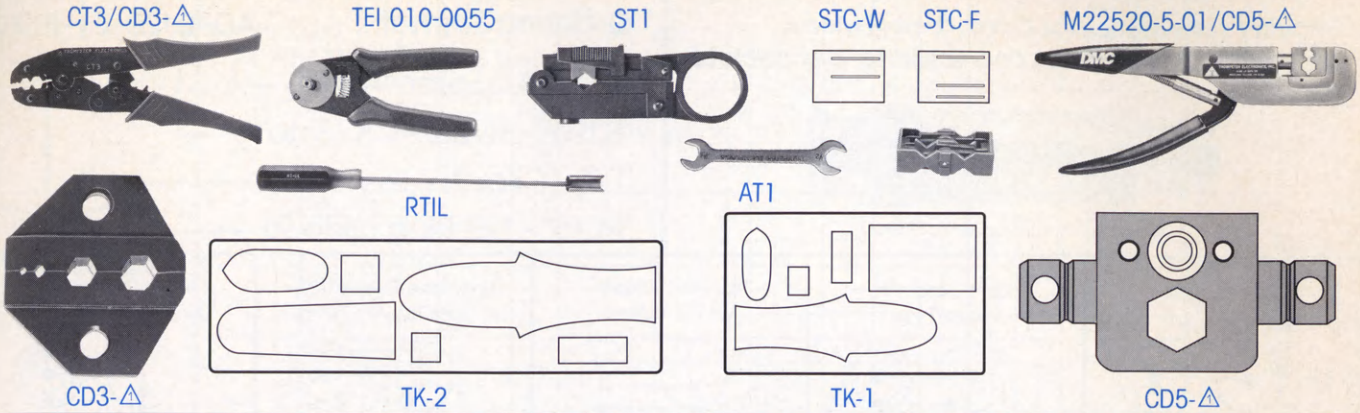
## Twinax/Triax "Tool Crimp" Connectors

• - Connector available for that cable group.

| PAGE | CONNECTOR | CABLE GROUP | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 | 301 | 302 | 303 | 305 | 306 | | | |
| 42 | BJ154AC/BJ154ACFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 41 | BJ159AC/BJ159ACFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 41 | CJ150AC/CJ150ACFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 42 | BJ3154AC | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 41 | BJ3159AC | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 41 | CJ3150AC | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 37 | CJ70C/CJ70CFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 37 | CJ70CTL/CJ370C | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 38 | BJ74C/BJ74CFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 38 | BJ74CTL/BJ374C | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 38 | BJ79C/BJ79CFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 38 | BJ79CTL/BJ379C | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 37 | PL73C | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 37 | PL74C | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 37 | PL75C/PL75CFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 43 | PL153AC | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 41 | PL155/PL155ACFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 37 | PL375C | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 41 | PL3155AC | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | • | | | |
| 37 | PLR74C/PLR75CTL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | | |
| 37 | PLR75CFL/PLR375C | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | | | |
| 41 | PLR155AC/PLR155ACFL | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 41 | PLR3155AC | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | | |
| 35 | SPC8P | • | • | • | • | • | | | | | | | | | | | | • | • | | | • | • | | • | | | | | | | |
| 35 | SPC8S | • | • | • | • | • | | | | | | | | | | | | • | • | | | • | • | | • | | | | | | | |
| 45 | BJ459AC/GROUP | • | • | • | • | • | • | | • | • | | | • | | | | | • | • | • | • | • | • | • | | | | | | | | |
| 45 | CJ450AC/GROUP | • | • | • | • | • | • | | • | • | | | • | | | | | • | • | • | • | • | • | • | | | | | | | | |
| 36 | PL455AC/GROUP | • | • | • | • | • | • | | • | • | | | • | | | | | • | • | • | • | • | • | • | | | | | | | | |
| 44 | PLR455AC/GROUP | • | • | • | • | • | • | | • | • | | | • | | | | | • | • | • | • | • | • | • | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

# TOOLS

## Coax, Twinax and Triax Crimp Tools and Dies




### COAX CRIMP TOOL

| | |
|---|---|
| Tool Only | CT3 |
| Tool with die | CT3/CD3-△ |

Standard & Miniature Patching, 20 Series-BNC, 40 Series-TNC, 50 Series-TPS and 350 Series TCM connectors

ZIP-SHIP TROMPETER

**Connector Center Contact**

| | |
|---|---|
| 50Ω Connectors | CD3 die sleeve C |
| 75Ω BNC or TNC connectors | TEI 010-0055 |

**Connector Crimp Sleeve**

| Cable Group | Die | Sleeve | Die # |
|---|---|---|---|
| 001, 003, 004, 007-010, 026-027 | B | .178 Hex | CD3-1 |
| 011-012, 021 | A | .213 Hex | |
| 013-014, 018-019 022-023, 025 | B | .255 Hex | CD3-2 |
| 016 | A | .324 Hex | |
| 015, 020, 024 | B | .290 Hex | CD3-3 |
| 017 | A | .324 Hex | |
| 002, 005-006 | B | .197 Hex | CD3-5 |

### CRIMP TOOL KITS

TCK △ (Connector)-(Cable Grp #)

| | |
|---|---|
| CT3 crimp tool with 1 die (△-specify die). Stripping tool with cassette in an 8"x12.25"x2.12" box | |
| CT3 crimp tool with CD3-2 and CD3-5 dies in an 8"x12.25"x2.12" box | TK-1 |
| Same as TK1 plus TEI-010-0055 center-contact crimp tool in an 6.25"x18"x4.62" box with tray. | TK-2 |

### CONNECTOR REMOVAL TOOL

ZIP-SHIP TROMPETER

| Connector Type | Tool Length | |
|---|---|---|
| BNC, TNC, TRB, TRT, TWBNC TWTNC | 12" | RT1L |
| | 6" | RT1S |
| | 3" | RT1SS |
| N | 12" | RT3L |
| | 6" | RT3S |
| TPS, TCM, TRS, TTM | 12" | RT4L |
| | 6" | RT4S |
| TRC, TRN | 12" | RT5L |
| | 6" | RT5S |

### STRIPPING TOOL

ZIP-SHIP TROMPETER

| | |
|---|---|
| With Tool Crimp cassette | ST1/STC-F |
| With Wrench Crimp cassette | ST1/STC-W |
| Tool only | ST1 |
| **Tool Crimp Cassette** | STC-F |
| **Wrench Crimp Cassette** | STC-W |

### CONNECTOR ASSEMBLY TOOL

ZIP-SHIP TROMPETER

| Connector Type | |
|---|---|
| BNC, TNC, N, TRB, TRT | AT1 |
| TPS, SMA, PL1C, TRS, TTM | AT2 |
| TPS, SMA, PL1C, TRS, TTM | (Hex) AT4F |

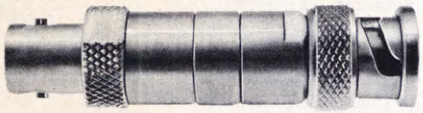
### TWINAX/TRIAX TOOL CRIMP

| Connector Series | Cable Type | Cable Group Number | Center Contact Tool | Center Contact Positioner | DIE SET # Body-A | DIE SET # Shield-B |
|---|---|---|---|---|---|---|
| M39039-90-529 M39039-91-530 (Contacts for #8 Cavity) | Twinax | 201-203, 205 217-222 | M22520/2-01, (Daniels' AFM8 or equivalent) | Daniels' K709 | CD5-4 | Daniels' Y631 |
| | Triax | 301-303 | | | | CD5-7 |
| PLR150AC Series PLR 70C Series 70C Series | Twinax | 201-223 | M22520/1-01, (Daniels' AF8 or equivalent) | Pin - TEI 010-0044 Socket - TEI 010-0045 | | CD5-8 |
| | Triax | 301-303 305-306 | | | | CD5-10 |
| 150AC Series (Sm Body) 450AC Series | Twinax | 201-206, 208 209, 217-223 | M22520/2-01, (Daniels' AFM8 or equivalent) | TEI 010-0041 (Daniels' K815S) | | CD5-9 |
| PLR450 Series | | | | | | CD5-12 |
| 150AC Series (Sm Body) | Triax | 301-303 | | | | CD5-11 |
| 150AC Series (Lg Body) | Twinax | 207, 210-216 | M22520/2-01, (Daniels' AFM8 or equivalent) | TEI 010-0043 (Daniels' K816S) | | CD5-8 |
| | Traix | 306 | | | | CD5-13 |

# ADAPTERS

## Adapter Ordering Format and Circuitry Schematics

**Circuitry schematics for Coax, 2-pin Twinax, Concentric Twinax/Triax and Quadrax Connectors.**

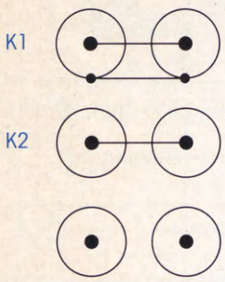


For adapters not referenced call factory.

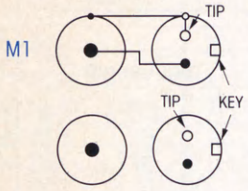
**Ordering Format:** AD–BJ20–E1–PL75

- "AD" - Adapter
- "BJ20" - BNC JACK (Side 1)
- "E1" - Circuit
- "PL75" - TRB Plug (Side 2)

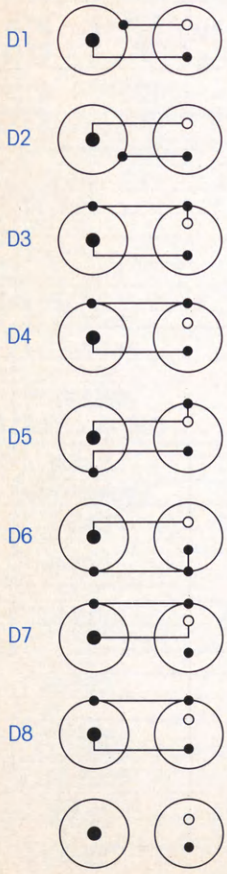
### Coax to Coax



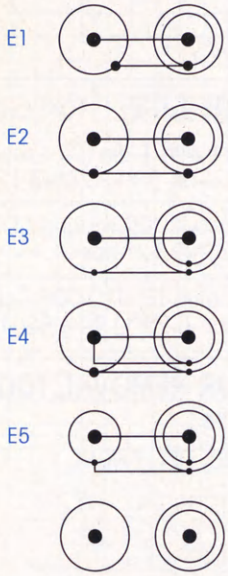

### Coax to Large 2-Pin Twinax



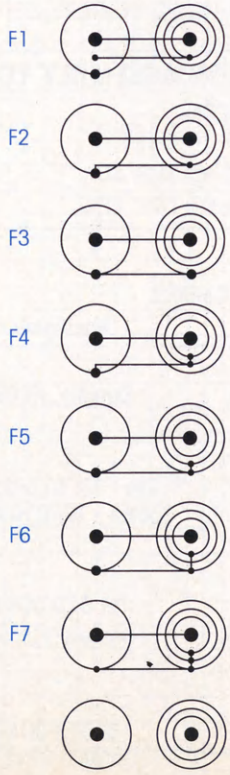

### Coax 2-Pin Twinax



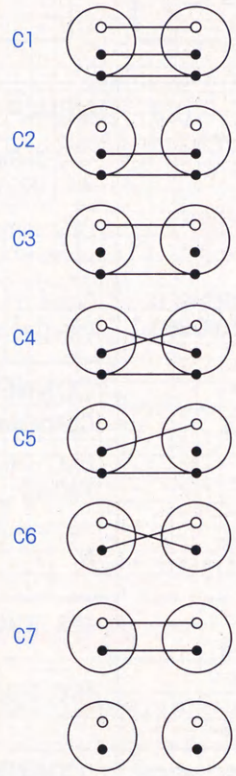

### Coax to Concentric Twinax/Triax



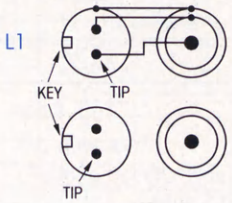

### Coax to Quadrax



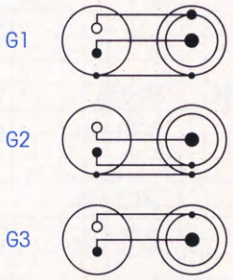

### Two-Pin Twinax to Two-Pin Twinax



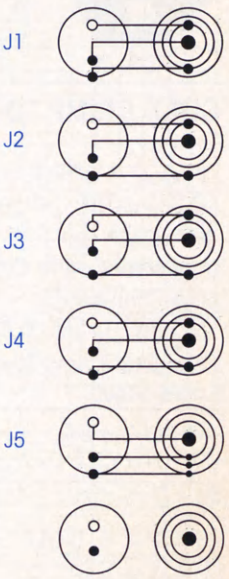

### Concentric Twinax/Triax to Large Two-Pin Twinax



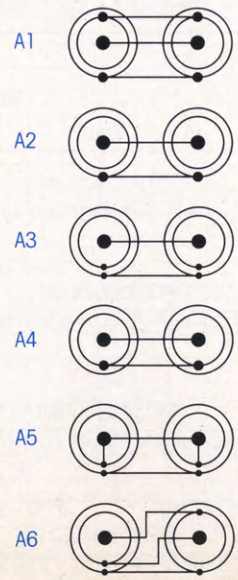

### Two-Pin Twinax to Concentric Quadrax



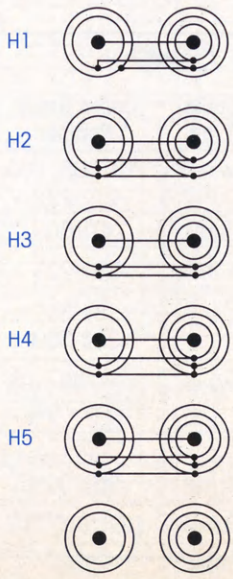

### Two-Pin Twinax to Concentric Quadrax



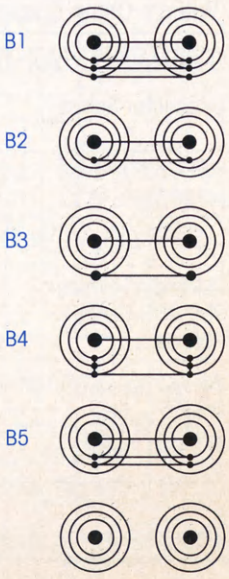

### Concentric Twinax/Triax to Concentric Twinax/Triax




### Concentric Twinax/Triax to Concentric Quadrax




### Quadrax to Quadrax



# ADAPTERS

## Adapter Tables: Coax to Coax, Coax/Twinax/Triax to Twinax/Triax

I = Insulated
B = Bulkhead Mount
U = 75 Ohm Available
F = Female
M = Male

To order **adapters indexed by** a "•", use format on page 52.

To order **adapters indexed by** a "#", use designated part number from below.

Adapters listed below have fixed circuits (i.e. pin to pin & shield to shield).

| | | | | | | TPS | | | BNC | | | | | | | | TNC | | | | | | | | F | | LV | | N | | | | RCA | | | WECO | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | BJ59 | CJ50 | PL50 | BJ20 | BJ26 | BJ29 | CJ20 | PL20 | PL21 | UPL121 | PL122 | PL123 | BJ40 | BJ46 | BJ49 | CJ40 | PL40 | PL41 | BJ130 | PL130 | PL93 | PL94 | BJ95 | BJ96 | J95 | PL95 | J3 | J12 | PL11 | PL1W | PL2W |
| | | | | | | | | | U | U | U | U | U | U | | | U | U | U | U | U | U | U | | | | | U | U | U | U | | | | | |
| | | | | | | F | F | M | F | F | F | F | M | M | M | M | M | F | F | F | F | M | M | F | M | M | M | F | F | F | M | F | F | M | M | M |
| | | | | | | B | | | | B | B | | | | | | | | B | B | | | | | | | | B | B | | | | | | | |
| | | | | | | | | | | I | | | | | | | | | I | | | | | | | | | | I | | | | | | | |
| TPS | | BJ50 | F | | | 17 | | • | | | • | | | | | | | | | | | | | | | | | | | | | • | | | | |
| | | BJ59 | F | B | | 17 | 17 | | • | | | | | | | | | | | | | | | | | | | | | | • | | | | | |
| | | CJ50 | F | | | 17 | | • | • | | | | | | | | | | | | | | | | | | | | | | • | | | | | |
| TCM | | BJ350 | F | | | 24 | | • | | | | • | | | | | | | | | | | | | | | | | | | | • | | | | |
| | | BJ359 | F | | | 24 | 24 | | • | | | | | | | | | | | | | | | | | | | | | | • | | | | | |
| | | CJ350 | F | | | 24 | | • | • | | | | | | | | | • | | | | | | | | | | | | | • | | | | | |
| BNC | U | BJ20 | F | | | • | | • | 1 | 14 | • | 1 | • | | | 7 | • | 13 | 28 | | 13 | • | | | 8 | • | • | 5 | 6 | | • | | | | | |
| | U | BJ26 | F | B | I | | | | 14 | 14 | 14 | 14 | • | | | • | • | 27 | 27 | 27 | | • | | | | | | | | | | | | | | |
| | U | BJ29 | F | B | | | | | • | 14 | | | | | | | • | • | 27 | • | | • | | | | | | | | | | | | | | |
| | U | CJ20 | F | | | | | | 1 | 14 | | 1 | • | | | | • | 27 | | | 27 | | | | | | | | | | • | | • | | | |
| | U | PL20 | M | | | • | | • | • | | • | • | • | • | | • | • | • | • | • | | • | • | 9 | | | | • | • | • | | | • | | | • |
| TNC | U | BJ40 | F | | | | | • | 27 | 27 | | 27 | • | | | 11 | • | 2 | 16 | • | 2 | • | | | | | | • | | | • | | | | | |
| | U | BJ46 | F | B | I | | | | 27 | 27 | 27 | | | | | • | • | 16 | 16 | 16 | 16 | | | | | | | | | | | | | | | |
| | U | CJ40 | F | | | | | | 27 | | | 27 | | | | | • | 2 | 16 | | 16 | | | | | | | | | • | | | | | | |
| | U | PL40 | M | | | • | | • | • | • | • | | | | | • | • | • | • | • | | • | | | | | | | | • | | | | | | |
| F | | BJ130 | F | | | | | | | • | • | • | 10 | | | • | • | | • | • | • | • | | 9 | | | | • | | | • | | | | | |
| LV | | PL93 | M | | | | | | • | | | | | | | | | | | | | | | | | | | | | • | • | | | | | |
| N | U | BJ95 | F | B | | | | | 6 | | | | • | | | | | • | | | | | | • | | | | 20 | | | | | | | | |
| | U | BJ96 | F | B | I | | | | 6 | | | | • | | | | • | | | | | • | | • | | | | | | • | | | | | | |
| | U | J95 | F | | | | | • | | • | • | • | • | | | 4 | • | | • | • | • | • | | | | | | | | | | | | | | |
| | U | PL95 | M | | | | | | • | | | | | | • | | • | • | | | | • | | • | | • | | | | • | • | | • | | | |
| RCA | | J3 | F | | | | | | | | | | | • | | | | | | | | | | | | | | | | | | • | | | | |
| | | J12 | F | | | | | | | | | • | • | | | | | | | | | | | | | | | | | | • | | • | | | |
| | | PL11 | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | • | | |
| WECO | | J3W | F | | | | | | | | | | | • | • | | | | | | | | | | | | | | | | | | | | | |
| | | J3WC | F | | | | | | | | | | • | | | | | | | | | • | | | | | | | | | | | | | | |
| | | J3WE | F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | • | | |
| | | J9W | F | | | | | | | | | | | | | | | | | | | | | | | | | | | | • | | | | | |
| | | PL2W | M | | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | • | | | |

Adapters Coax to Coax

| | | | | | | TPS | | TCM | BNC | | | | | | | | TNC | | | | | N | | | | TRS | | | TRB | | | | | | TRT | | | TWBNC | | TRC | | | | QRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | BJ50 | PL50 | BJ350 | BJ20 | BJ26 | BJ29 | CJ20 | PL20 | PL123 | BJ40 | BJ49 | CJ40 | PL40 | BJ95 | BJ96 | J95 | PL95 | BJ157 | BJ157FL | CJ150 | BJ72 | BJ74 | BJ77 | BJ79 | CJ70 | PL75 | BJ377 | BJ379 | PL375 | BJ30 | PL30 | BJ80 | CJ80 | PL80 | BJ101 |
| | | | | | | | | | U | U | U | U | U | | U | U | U | U | U | U | U | U | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | F | M | M | F | F | F | F | M | M | F | F | F | M | F | F | F | M | F | F | F | F | F | F | F | F | M | F | F | M | F | M | M | M | F | F |
| | | | | | | | | | | B | B | | | | | B | | | B | B | | | | | | | B | | B | | | | B | | | | | | | | | |
| | | | | | | | | | | I | | | | | | | | | I | | | | | | | I | I | | | | | | | | | | | | | | | | |
| TRS | | BJ157 | F | | | | | | | | | | | | | | | | | | | | | | | | | • | • | | • | • | • | • | | | | | | | | | |
| | | BJ157FL | F | | | | | | | | | | | | | | | | | | | | | | | | • | | | | • | | | | | | | | | | | | |
| | | CJ150 | F | | | | | | | | | • | • | | | | | | | | | | | | | | | • | • | | • | • | • | • | | | | | | | | | |
| | | PL150 | M | | | | | | | • | • | • | • | | | • | • | • | • | • | | • | | | | | | • | • | | | • | • | | | | | | | | | | |
| | | PL155 | M | | | | | | | • | • | • | • | | | • | • | • | | | | | | | | | | • | | | | • | | | | | | | | | | | |
| | | PL155FL | M | | | | | | | • | • | • | • | | | • | • | • | | | | | | | | | | • | | | | • | | | | | | | | | | | |
| TTM | | PL3155 | M | | | | | | | • | • | • | • | | | • | • | • | | | | | | | | | | • | | | | | | | | | | | | | | | |
| TRB | | BJ74 | F | B | I | | | | • | • | • | | • | • | • | • | | • | | | • | • | • | • | | | 18 | 18 | 29 | | | 26 | 26 | | | • | | | | | | • |
| | | BJ77 | F | | | | • | | | • | • | • | • | • | | • | • | • | • | • | • | • | • | • | • | | 18 | 3 | 29 | 3 | • | 26 | 26 | • | | • | | • | • | | | |
| | | BJ79 | F | B | | | | | • | | • | | • | | • | | | • | | | • | • | • | • | • | | 29 | 29 | 29 | | • | 26 | 26 | • | | • | | | | | | • |
| | | CJ70 | F | | | • | | • | • | | | | | | • | | | | | | • | | | | | | | 3 | | 3 | | 12 | | | • | • | | | | | | • |
| | | PL71 | M | | | | | | • | | | | • | • | • | | | • | | | • | | | | | | | | • | | | • | | | | | | | | | | | |
| | | PL74 | M | | | | | | • | | | | • | | • | | | • | • | • | • | • | • | • | | | | • | • | • | | • | • | • | • | | | | | | | | |
| | | PL75 | M | | | • | | • | • | • | • | • | • | | • | • | | • | • | • | • | • | • | • | • | | | • | • | | | • | • | | • | • | • | | • | | | • |
| TRT | | BJ374 | F | | I | | | | • | | | | • | | • | | | • | | | • | • | • | • | | | • | • | | | • | • | | • | | • | | | | | | • |
| | | BJ377 | F | | | | • | | | • | • | • | • | • | | • | • | • | • | • | • | • | | | | | | | | | | | | | | | | | | | | |
| | | BJ379 | F | B | | | | | • | | • | | • | | • | | | • | | | • | • | • | • | | | • | • | | | • | • | | • | | • | | | | | | • |
| | | CJ370 | F | | | • | | • | • | | | | | | • | | | | | | • | | | | | | | • | | | | • | | | | • | | | | | | • |
| | | PL375 | M | | | • | | • | • | • | • | • | • | | • | • | | • | • | • | • | • | • | | | | | • | | | • | • | | | | • | | | | | | • |
| TWBNC | | BJ30 | F | | | | | | | | | • | • | | | | • | • | | | | | | | | | | | | | | | | | • | • | | | | | | |
| | | BJ39 | F | B | | | • | | | | | | | | | | | | | | | | | | | | • | | • | • | • | | • | • | 15 | | | | | | | |
| | | CJ30 | F | | | | | | | | | | | | | | | | | | | | | | | | • | | • | • | • | | • | • | • | | | | | | | • |
| | | PL30 | M | | | | | | • | • | • | • | • | | | • | • | • | | | | | | | | | | • | | | • | • | | • | • | • | | | | | | • |
| TRC | | BJ89 | M | B | | • | | • | • | | | | | | • | | | | | | • | • | | | | | | | | | | | | | | | | 19 | | | | |
| | | BJ89F | M | B | | • | • | | | | | | | | | | | | | | | • | | | | | | • | | | | • | | | | | | | | | | |
| | | CJ80 | M | | | | | | • | | | | • | | | | | • | • | | • | • | | | | | | • | | | • | | | • | | | | | | | | |
| | | PL80 | F | | | | | | • | | | | | | | | | | | | • | • | | | | | | • | | | | • | | | | | | | | • | | |
| QRC | | BJ101 | F | | | | | | | | | • | • | • | | | • | • | | | | • | | | | • | | | • | | • | | • | | • | | | | | | | • |
| RCA | | PL101 | M | | | | | | • | | | • | • | | • | | • | | | | • | | | | | | | | • | | | | • | | | | | | | | | • |

Adapters Coax/Twinax/Triax to Twinax/Triax

| ID# | PART # |
|---|---|
| 1 | AD 28 |
| 2 | AD 48 |
| 3 | AD 78 |
| 4 | AD 92 |
| 5 | AD 95 |
| 6 | ADI 95 |
| 7 | AD 122 |
| 8 | AD 130 |
| 9 | AD 131 |
| 10 | AD 133 |
| 11 | AD 142 |
| 12 | AD 378 |
| 13 | AD 2848 |
| 14 | BJ 28 |
| 15 | BJ 38 |
| 16 | BJ 48 |
| 17 | BJ 58 |
| 18 | BJ 73 |
| 19 | BJ 88 |
| 20 | BJ 98 |
| 21 | BJ102 |
| 22 | BJ158 |
| 23 | BJ158FL |
| 24 | BJ 358 |
| 25 | BJ373 |
| 26 | BJ378 |
| 27 | BJ 2848 |
| 28 | BJ 4828 |

# Panels Introduction & Specifications

## INTRODUCTION:

Listed in the catalog is a collection of panels in popular sizes and jack configurations.

**Custom Panels:** Special panels of any size and jack configuration can be furnished on special order.

## PANEL FEATURES:

| | |
|---|---|
| **Standard/Miniature 50Ω/75Ω** rack-mount patch panels | 19"x1.75"x.56"<br>19"x3.50"x.56" |
| **Miniature 75Ω** flush mount patch panel | 17.15"x1.75"x.56" |

**Vertical Hole Center-spacing**

| | |
|---|---|
| Standard patch panels | .625" |
| 3.50" standard patch panels "W" configuration option | 1.00" |
| Miniature 50Ω/75Ω patch panels | .50" |
| Miniature 50Ω patch panels "B" configuration | 1.10" |

**Notching:**

| | |
|---|---|
| Standard MIL-STD-189 | Open |
| Special order | Closed |

**Material:** JS Series, Common ground panels

| | |
|---|---|
| Panel | 6061-T6 grade aluminum |
| Backbar | 6061-T6 grade aluminum |

**Material:** JSI Series, Insulated panels

| | |
|---|---|
| Panel | 6061-T6 grade aluminum |
| Backbar | XXX non-hydroscopic phenolic |
| Jack insulation | Nylon sleeves |

**Finishes:**

| | |
|---|---|
| Standard Finish | FED-STD-595-26307, Light Gray |
| Customer Specified | FED-STD-595# or paint chip |
| Chemical film finish | MIL-C-5541 Class 1a (Gold tone)<br>MIL-C-5541 Class 3 (Clear) |
| **Identification:** | Stainless designation strip, card & plastic window |
| Standard patch panels | DS1 .50" x 16.5"<br>DS2 .75" x 16.5" |
| High density patch panels | DS4 .25" x 16.5" |

**Custom Marking:** Panel front may be engraved or silk-screened in lieu of, or in addition to, designation strips. Patch jack locations can also be marked on the rear of the panel for easy location of jacks from the back of the rack. These markings are usually stenciled.

## SPECIAL PANELS:

**Miniature 50Ω Coax Patch Panels:** page 57

Panels are for use in high density 50Ω patching. Both insulated and non-insulated panels have stiffener bars.
Holes are tapped .3125"-32-2B.

**Miniature 50Ω Coax Patching** page 16-17

**Miniature 75Ω Coax Patch Panels:** page 58

Panels are for high density, low VSWR 75Ω coaxial applications such as microwave, sub-carrier telephone or similar systems.
Trompeter's J12 jack and the PL1C plug combination have a VSWR or 1.04:01 when used in the 60-80 MHz range.

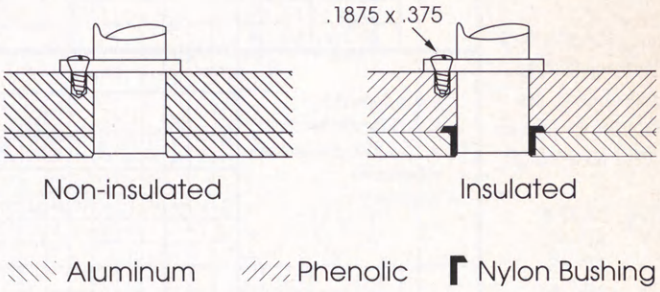
**Miniature 75Ω Coax Patching** pages 18-20

**Low VSWR 50Ω Coax Panels** page 15

**Custom Panels** page 6

**Cable Distribution Cables** page 59

## PANEL CROSS SECTION




## ORDERING INFORMATION:

Panels can be ordered separately or combined with any combination of jacks (provided the mechanical restrictions are recognized) by using the following part number format.

**Example:**

**JS-12** standard non-insulated panel loaded with twelve (12) J3 Standard 50Ω patch jacks

**JS-12/J3**

**Selected panel part number**
JS = Aluminum panel (Open notch)
JSI = Insulated panel (Open notch)
**Selected jack part number**

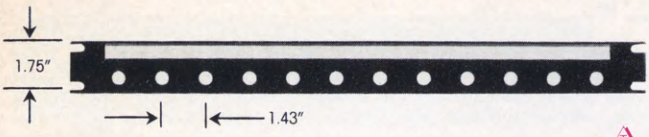
Custom Panels page 6

# Standard Patch



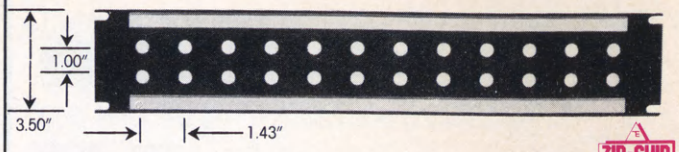
## STANDARD PATCH PANEL
✱-J14, J15

Non-insulated **JS-12**
Insulated **JSI-12**



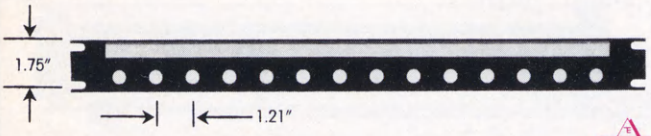

## STANDARD PATCH PANEL
✱-J14, J15

Non-insulated **JS-24W**
Insulated **JSI-24W**



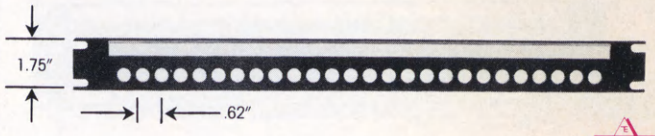

## STANDARD PATCH PANEL
✱-J14, J15

Non-insulated **JS-14**
Insulated **JSI-14**



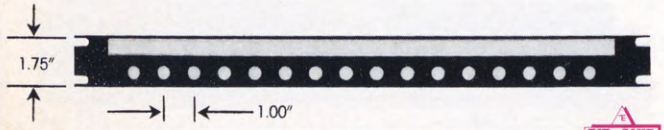

## STANDARD PATCH PANEL
✱-J9, J14, J15

Non-insulated **JS-26**
Insulated **JSI-26**



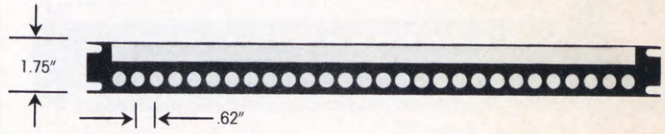

## STANDARD PATCH PANEL
✱-J14, J15

Non-insulated **JS-16**
Insulated **JSI-16**



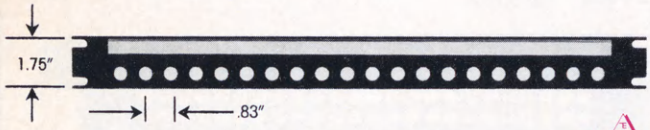

## STANDARD PATCH PANEL
✱-J9, J14, J15

Non-insulated **JS-28**
Insulated **JSI-28**



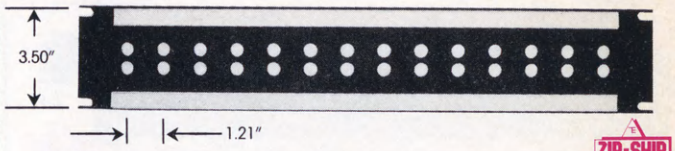

## STANDARD PATCH PANEL
✱-J14, J15

Non-insulated **JS-20**
Insulated **JSI-20**



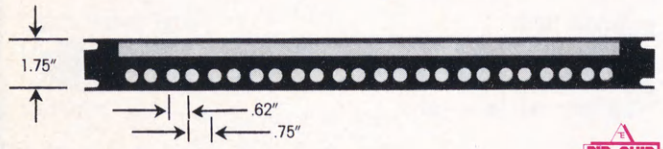

## STANDARD PATCH PANEL
✱-J9, J10

Non-insulated **JS-28A**
Insulated **JSI-28A**



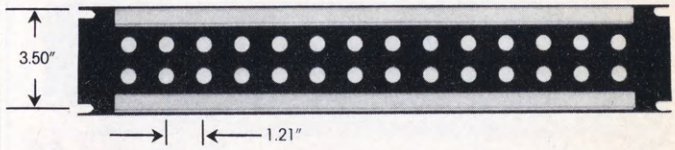

## STANDARD PATCH PANEL
✱-J9, J14, J15

Non-insulated **JS-24S**
Insulated **JSI-24S**



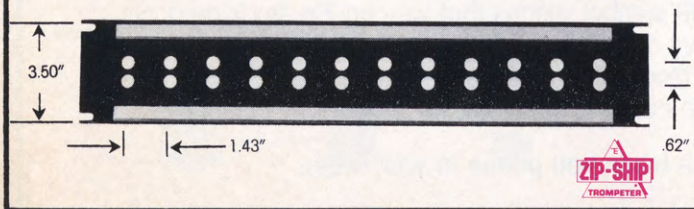

## STANDARD PATCH PANEL
✱-J14, J15

Non-insulated **JS-28W**
Insulated **JSI-28W**



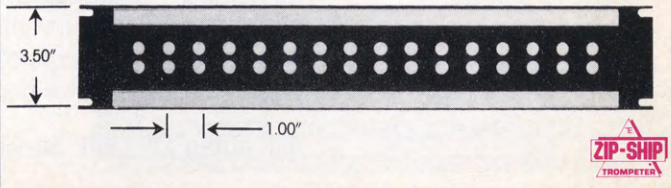

## STANDARD PATCH PANEL
✱-J9

Non-insulated **JS-24L**
Insulated **JSI-24L**




## STANDARD PATCH PANEL
✱-J9

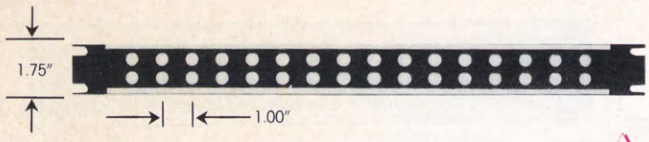
Non-insulated **JS-32A**
Insulated **JSI-32A**



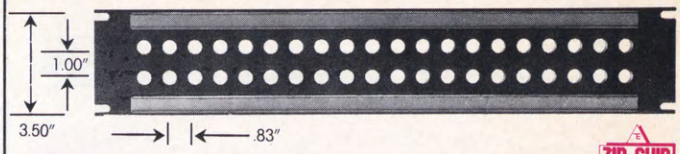

✱-Panel will not accept listed jacks, **Standard Patch Jacks** pages 7-10 & 47

# PANELS
## Standard Patch

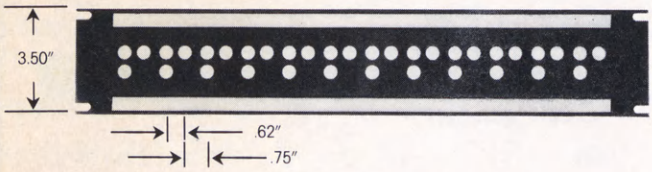
### STANDARD PATCH PANEL
Non-insulated **JS-32S**
Insulated **JSI-32S**
*-J9



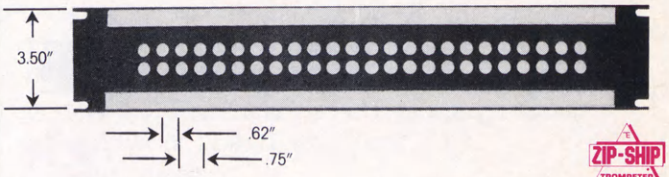

### STANDARD PATCH PANEL
Non-insulated **JS-40W**
Insulated **JSI-40W**
*-J14, J15



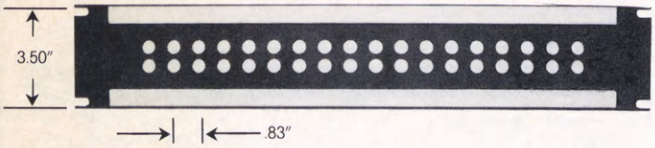

### STANDARD PATCH PANEL
Non-insulated **JS-36**
Insulated **JSI-36**
*-J9, J14, J15



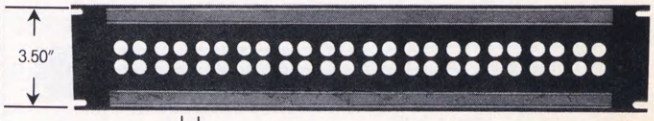

### STANDARD PATCH PANEL
Non-insulated **JS-48**
Insulated **JSI-48**
*-J9



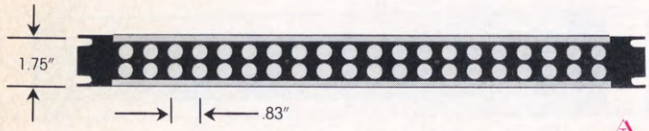

### STANDARD PATCH PANEL
Non-insulated **JS-36A**
Insulated **JSI-36A**
*-J9



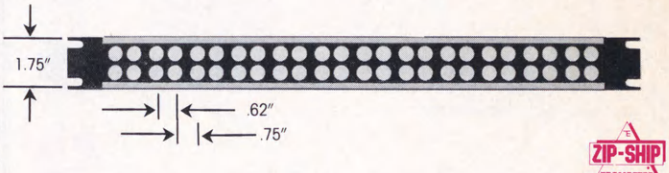

### STANDARD PATCH PANEL
Non-insulated **JS-48A**
Insulated **JSI-48A**
*-J9



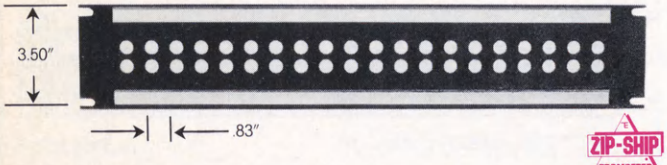

### STANDARD PATCH PANEL
Non-insulated **JS-40S**
Insulated **JSI-40S**
*-J9



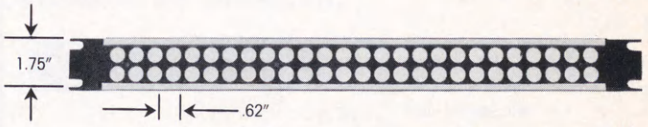

### STANDARD PATCH PANEL
Non-insulated **JS-48S**
Insulated **JSI-48S**
*-J9




### STANDARD PATCH PANEL
Non-insulated **JS-40**
Insulated **JSI-40**
*-J9




### STANDARD PATCH PANEL
Non-insulated **JS-52S**
Insulated **JSI-52S**
*-J9




**OBSESSION: On-Time Delivery!** **Zip Ship Service**

ZIP-SHIP 24 HR. TROMPETER

Remember . . . the **ZIP-SHIP** symbol means that we can **Zip** stock products from our expanded inventory and **Ship** them **FedEx, DHL, UPS** or via your routing within 24 hours of receipt of your order! Lead times for many Non-stock or Custom items have been cut from 12 weeks to 8 weeks or less!

**Ask about ZIP-SHIP Service when you phone in your order.**

*-Panel will not accept listed jacks, **Standard Patch Jacks** pages 7-10 & 47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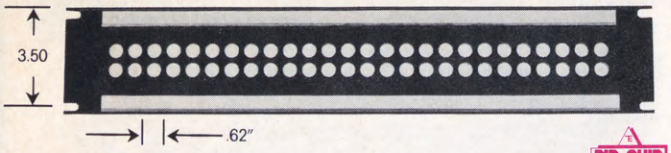
# PANELS

## Standard Patch, Miniature 75Ω Patch

### STANDARD PATCH PANEL

Non-insulated **JS-52**
Insulated **JSI-52**

*-J14, J15




ZIP-SHIP TROMPETER

### Patch Panels for Miniature Coax 50Ω

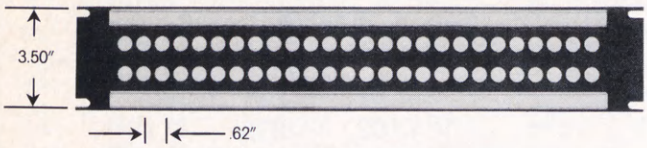
These 19″ panels are tapped .312-32-2A to accept J8 & J8D jacks with vertical and horizontal hole spacing .5″ center-to-center unless otherwise noted.
Both insulated and non-insulated panels have stiffener bars.

Used for high density 50Ω patching.

### STANDARD PATCH PANEL

Non-insulated **JS-52W**
Insulated **JSI-52W**

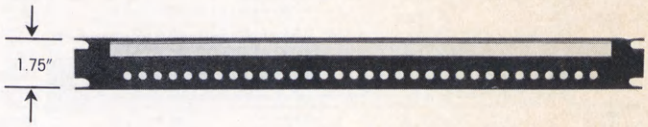
*-J9, J14, J15




### MINIATURE COAX 50Ω

Patch Panel

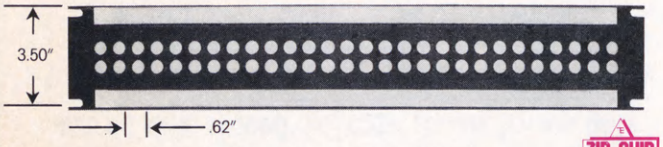
Non-insulated **JS-32**
Insulated **JSI-32**




### STANDARD PATCH PANEL

Non-insulated **JS-56**
Insulated **JSI-56**

*-J9, J14, J15

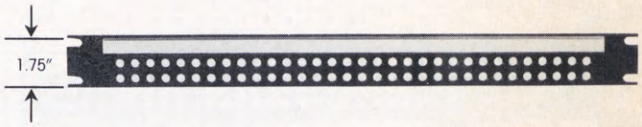



ZIP-SHIP TROMPETER

### MINIATURE COAX 50Ω

Patch Panel

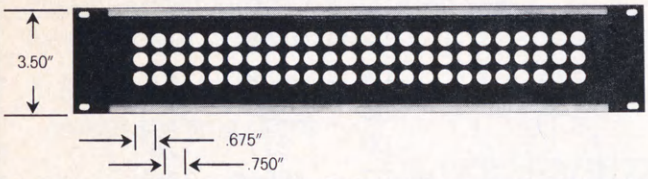
Non-insulated **JS-64S**
Insulated **JSI-64S**




### STANDARD PATCH PANEL

Non-insulated **JS-72**
Insulated **JSI-72**

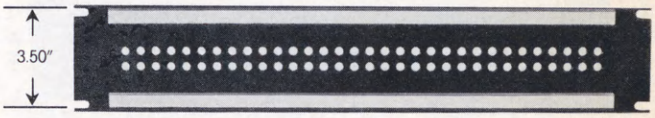
*-J9, J14, J15




### MINIATURE COAX 50Ω

Patch Panel

Non-insulated **JS-64L**
Insulated **JSI-64L**




### PANEL HOLE PLUGS

| Patch Panel Type | Part Number |
|---|---|
| Miniature 50Ω | HP250 |
| Miniature 75Ω | HP358 |
| Standard | HP437 |

**Jack Hole Plugs**

| Jack Type | Part Number |
|---|---|
| Miniature 75Ω | HP304 |
| Standard | HP375 |

**Note:** Number denotes hole size in thousandths.

HP437

HP375

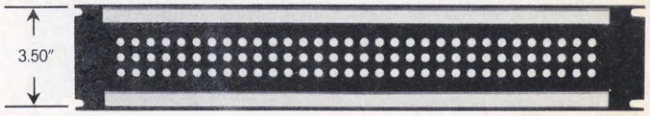
HP250

ZIP-SHIP TROMPETER

### MINIATURE COAX 50Ω

Patch Panel

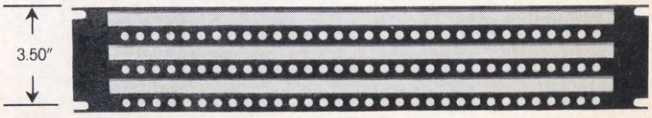
Non-insulated **JS-96A**
Insulated **JSI-96A**




### MINIATURE COAX 50Ω

Patch Panel

Non-insulated **JS-96B**
Insulated **JSI-96B**




**Standard Patch Jacks** pages 7-10 & 47

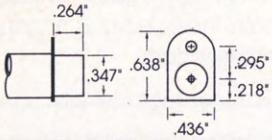
**Miniature 50Ω Patch Jacks** page 16

# Miniature Match 75Ω, Cable Distribution & "D" Hole Specifications

## Miniature 75Ω Coax Patch Panels

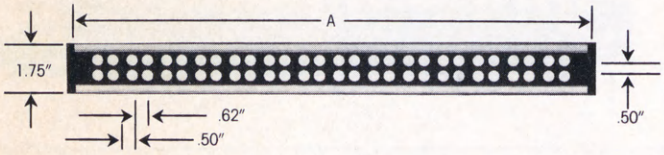
For high density, low VSWR 75Ω coaxial applications (microwave, sub-carrier telephone systems, etc.) Trompeter's J12 jack and the PL11C plug combination have a VSWR of 1.04:1 in the 60-80 MHz range.

Jack Mounting Detail



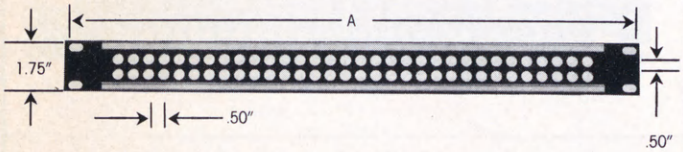

### MINIATURE COAX 75Ω
Insulated Patch Panel

Rack Mount **JSIX-56**
Flush Mount **JSIX-56F**



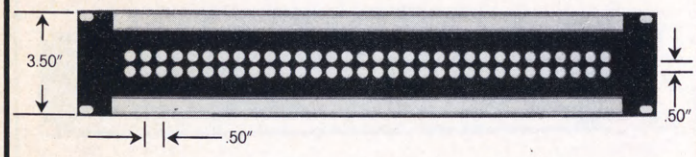

### MINIATURE COAX 75Ω
Insulated Patch Panel

Rack Mount **JSIX-64S**
Flush Mount **JSIX-64SF**



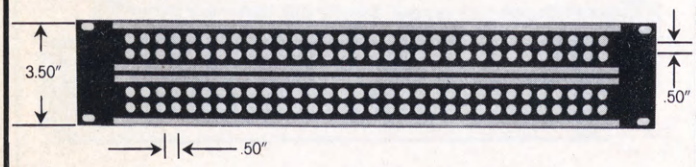

### MINIATURE COAX 75Ω
Insulated Patch Panel

Rack Mount **JSIX-64L**




### MINIATURE COAX 75Ω
Insulated Patch Panel

Rack Mount **JSIX-128**




**Miniature Coax 75Ω Patching**
page 18
**Miniature Coax 75Ω Patching**
page 48
**Custom Panels**
page 6

## "D" HOLE SPECIFICATIONS

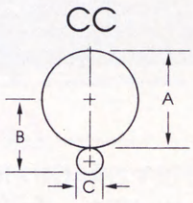
Throughout the catalog you will find "D" Holes called out for bulkhead jacks.

Example: **D2 . 140**

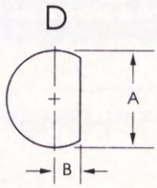
"D" Hole Type
Maximum panel thickness

### "D" Hole

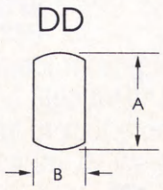
| Type | A | B | C |
|---|---|---|---|
| C1 | .317" | | |
| C2 | .375" | | |
| C3 | .437" | | |
| C4 | .468" | | |
| C5 | .505" | | |
| C6 | .755" | | |




| | | | |
|---|---|---|---|
| CC1 | .640" | .370" | .136" |




| | | |
|---|---|---|
| D1 | .755" | .343" |
| D2 | .630" | .281" |
| D3 | .505" | .218" |
| D4 | .439" | .187" |
| D5 | .380" | .317" |
| D6 | .317" | .128" |
| D7 | .281" | .125" |
| D8 | .610" | .285" |
| D9 | .567" | .257" |
| D10 | .192" | .079" |
| D11 | 1.005" | .470" |




| | | |
|---|---|---|
| DD1 | .630" | .532" |
| DD2 | .380" | .312" |
| DD3 | .505" | .443" |
| DD4 | .630" | .526" |
| DD5 | .475" | .436" |
| DD6 | .760" | .690" |
| DD7 | 1.140" | 1.060" |
| DD8 | .335" | .278" |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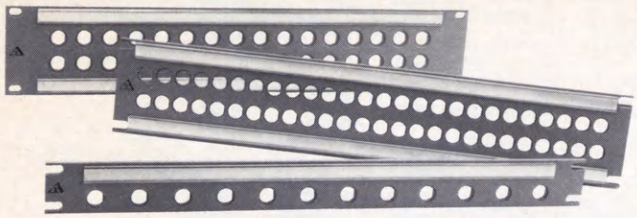
# Cable/Data Distribution Panels

## CABLE DISTRIBUTION PANELS



| # of holes | Panel Type | Panel Ht. | Hole Hor. | Spacing Vert. | Table Col. |
|---|---|---|---|---|---|
| 5 | JS(I)-5 | 1.75″ | 2.500″ | — | A |
| 8 | JS(I)-8 | 1.75″ | 2.070″ | — | B |
| 10 | JS(I)-10 | 1.75″ | 1.656″ | — | C |
| 12 | JS(I)-12 | 1.75″ | 1.430″ | — | D |
| 14 | JS(I)-14 | 1.75″ | 1.210″ | — | E |
| 16 | JS(I)-16 | 1.75″ | 1.000″ | — | F |
| 20 | JS(I)-20* | 1.75″ | 0.830″ | — | G |
| 24 | JS(I)-24 | 1.75″ | 1.460″ | 1.250″ | H |
| 24 | JS(I)-24W | 3.50″ | 1.430″ | 1.000″ | I |
| 32 | JS(I)-32 | 3.50″ | 1.000″ | 1.000″ | J |
| 40 | JS(I)-40* | 3.50″ | 0.875″ | 1.000″ | K |
| 40 | JS(I)-40W* | 3.50″ | 0.875″ | 1.000″ | L |
| 52 | JS(I)-52 | 3.50″ | 0.675″ | 1.000″ | M |

***JS(I)-20** - Hor. spacing 0.875″ for D2 and D3 hole types.
***JS(I)-40** - Hor. and Vert. spacing 0.830″ for D3 hole types.
***JS(I)-40W** - Hor. spacing 0.830″ for D3 hole types.

Panels accommodate the appropriate Trompeter bulkhead jacks designated by an "*" in the table to the right.
Panels are 19″ long and 1.75″ or 3.50″ high.
Panel specifications are on page 54.

### To order Cable Distribution Panels

use the following format:

***JS-12 D2SF8/BJ72**

Panel Type (from above) — JS-12
"D" Hole (from table) — D2SF8
Jack Type (from table) — BJ72

JS - Aluminum panel (Open notch)
JSI - Insulated panel (Closed notch)

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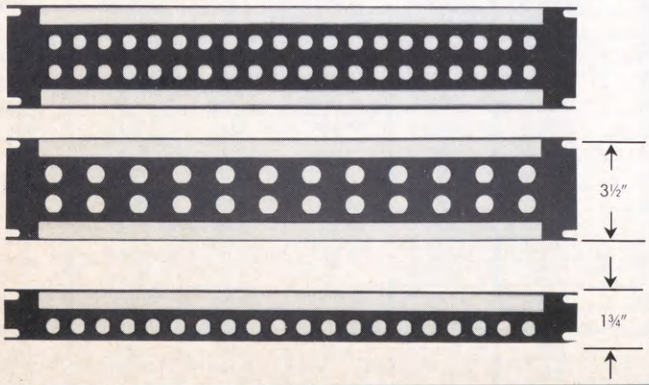
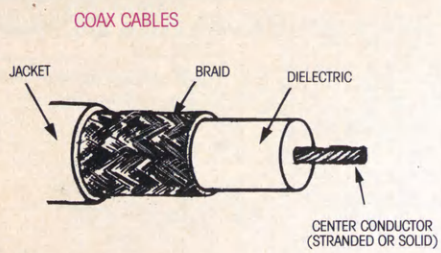
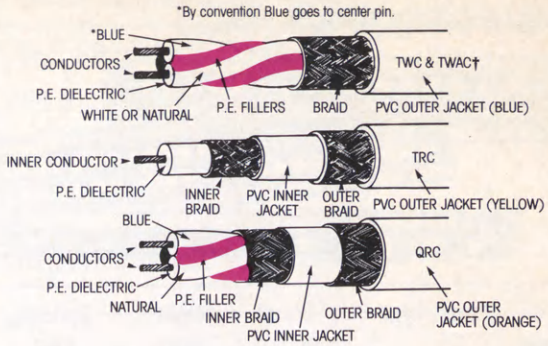



| DHoles | Panel Columns | | | | | | | | | | | | | Jacks 75Ω-Version prefixed "U" | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D Hole | A | B | C | D | E | F | G | H | I | J | K | L | M | U | Jack 2:3:4 Lug | Threaded |
| DD4 | • | • | • | • | • | • | • | • | • | • | • | • | | U | AD 95 | |
| DD4 | • | • | • | • | • | • | • | • | • | • | • | • | | U | ADI 95 | |
| D 5SF 5 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 20 | |
| D 3SF 6 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 21 | |
| D 2 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 26 | |
| D 8SF 12 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 26GF | |
| D 3SF 7 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 27 | |
| D 3SF 7 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 28 | |
| D 8SF 11 | • | • | • | • | | | | • | • | • | | | | U | BJ 28GF | |
| D 2 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 29-6 LRG BDY | |
| D 5SF 5 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 30 | BJ330 |
| D 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 31 | BJ331 |
| D 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 32 | BJ332 |
| D 3SF 8 | • | • | • | • | | | | • | • | • | | | | | BJ 38 | BJ388 |
| D 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 39 | BJ339 |
| D 5SF 5 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 40 | |
| D 3SF 6 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 41 | |
| D 2 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 46 | |
| D 8SF 12 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 46GF | |
| D 3SF 7 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 47 | |
| D 3SF 7 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 48 | |
| D 8SF 11 | • | • | • | • | | | | • | • | • | | | | U | BJ 48GF | |
| D 2 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 49-6 LRG BDY | |
| D 6 | • | • | • | • | | • | • | • | • | • | • | • | • | | BJ 50/FL | BJ350 |
| D 4SF 2 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 57/FL | BJ357 |
| D 5SF 9 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 58/FL | |
| D 4SF 4 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 59/FL | BJ359 |
| D 2SF 8 | • | • | • | • | | | | • | • | • | | | | | BJ 72/TL/FL | BJ372 |
| D 2SF 8 | • | • | • | • | | | | • | • | • | | | | | BJ 73/TL/FL | BJ373 |
| D 2SF24 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 74/TL/FL | BJ374 |
| D 2SF24 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 74C/TL/FL | BJ374C |
| D 2SF24 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 75/TL/FL | BJ375 |
| D 4SF25 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 77/TL/FL | BJ377 |
| D 3SF13 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 78/TL/FL | BJ378 |
| D 3SF15 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 79/TL/FL | BJ379 |
| D 3SF15 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 79C/TL/FL | BJ379C |
| D 1SF 1 | | | | | | | | • | | | | | | | BJ 80, BJ803 | BJ380 |
| D 1 | | | | | | | | • | | | | | | | BJ 83, BJ833 | BJ383 |
| D 1 | | | | | | | | • | | | | | | | BJ 88, BJ883 | BJ388 |
| D11 | • | • | • | | | | | | | | | | | | BJ 89 | BJ389 |
| DD6 | • | • | • | • | • | | | • | • | • | | | | | BJ 89, BJ893 | BJ389 |
| DD1 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 95 LRG BDY | |
| DD4 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 95 LRG BDY | |
| DD4 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 96 | |
| DD4 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 98 | |
| D 2 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 101 | |
| D 2 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 102 | |
| DD2SF14 | • | • | • | • | • | • | • | • | | • | • | • | • | | BJ 130 | |
| DD2SF30 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 138 | |
| DD2SF30 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 139 | |
| D 4 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 150/FL | BJ3150 |
| D 9 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 152/FL | BJ3152 |
| D 9SF 12 | • | • | • | | | | | | | | | | • | | BJ 153/FL | BJ3153 |
| D 9SF 12 | • | • | • | | | | | | | | | | • | | BJ 154/FL | BJ3154 |
| D 9SF 12 | • | • | • | | | | | | | | | | • | | BJ 154AC/FL | BJ3154AC |
| D 6 | • | • | • | • | | • | • | • | • | • | • | • | • | | BJ 157/FL | BJ3157 |
| D 5SF 9 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 158/FL | |
| D 4SF 4 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 159/FL | BJ3159 |
| D 4SF 4 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 159AC/FL | BJ3159AC |
| D 2SF 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 226 | |
| D 8SF 12 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 226GF | |
| D 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 229 | |
| D 2SF 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 246 | |
| D 8SF 12 | • | • | • | • | • | • | • | • | • | • | • | • | | U | BJ 246GF | |
| D 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | BJ 249 | |
| D 4SF 9 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 358 | * |
| DD8 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 450 | BJ3450 |
| DD8 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 457 | BJ3457 |
| DD8SF31 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 459 | BJ3459 |
| D11 | • | • | • | | | | | | | | | | | | BJ 893 LRG BDY | |
| D 3SF 7 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 2848 | REAR |
| D 4SF 9 | • | • | • | • | • | • | • | • | • | • | • | • | • | | BJ 3158 | * |
| D 3SF 7 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | BJ 4828 | REAR |
| D 9SF12 | • | • | • | | | | | | | | | | • | | CBJ 155/FL | BJ3155 |
| D 5SF 10 | • | • | • | • | • | • | • | • | • | • | • | • | • | U | J 95 | |
| D 4SF25 | • | • | • | • | • | • | • | • | • | • | • | • | • | | J 152FLFT | |
| D 4SF 25 | • | • | • | • | • | • | • | • | • | • | • | • | • | | J 152FT | J3152FT |
| DD5SF6 | • | • | • | • | • | • | • | • | • | • | • | • | • | | PL 122 | |
| DD8SF31 | • | • | • | • | • | • | • | • | • | • | • | • | • | | TBJ 451/FL | |
| D 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | UBJ 29 | |
| D 3 | • | • | • | • | • | • | • | • | • | • | • | • | | | UBJ 49 | |

# BLES
## ax, Twinax, Triax & Quadrax Cables






ZIP-SHIP TROMPETER

## TROMPETER COAX CABLES:

Coax cables are manufactured to the listed specifications and offer optimum flexibility, shielding and performance. Cables with stranded center conductors have greater flexibility and are recommended for short runs at low frequency where constant cable movement might fatigue a single copper-weld center conductor.

**Trompeter Twinax, Triax and Quadrax Cables:**
Cables are manufactured to the listed specifications. **M17/176-00002** and **TWAC-78-1F2** are 200° Hi Temp cables for MIL-STD. Dielectric and fillers are P.T.F.E. and outer jackets are PFA.

For information on cable construction and application see the appropriate section of the technical paper in appendix B.

**All values without tolerances are nominal.**

### Cable Specifications: Coax

| Designation | TCC-50-2 | TCC-75-2 | RG62 A/U | RG62 B/U |
|---|---|---|---|---|
| Impedance (Ohms) | 50±2 | 75±3 | 93±5 | 93 |
| Nominal Outer Dia. | 0.195 | 0.242 | 0.242 | 0.242 |
| PVC Outer Jacket | Green | Violet | Black | Black |
| Braid Outer Dia. | 0.150 | 0.191 | 0.196 | 0.191 |
| Braid AWG#/Material | 36/Tinned Cu | 34/Bare Cu | 34/Bare Cu | 34/Bare Cu |
| Dielectric Outer Dia. | 0.116 | 0.146 | 0.146 | 0.146 |
| Dielectric Material | Solid PE | Foamed PE | | |
| Conductor Outer Dia. | 0.0375 | 0.0310 | 0.0253 | Stranded |
| Conductor Strands/Material | 19/.0071 Tinned Cu | 7/.010 Tinned Cu | Solid | 7/.008 CCS |
| Minimum Bend Radius | 1.00 | 1.00 | | |
| Max. Opr. Vac. (RMS) | 1.4KV | 1.7KV | 750V | 750V |
| Capacitance pf/Ft (Max.) | 30.8 | 22.0 | 13.5 | 13.5 |
| Cond. Loop Res. (Ω/M Ft.) | | 17.6 | | |
| Atten. db/100 ft: | | | | |
| 1 MHz | 0.380 | 0.335 | 0.250 | 0.250 |
| 10 MHz | 1.400 | 1.070 | 0.900 | 0.900 |
| 50 MHz | 3.40 | 2.40 | 1.90 | 2.10 |
| 100 MHz | 4.90 | 3.40 | 2.80 | 3.00 |
| 200 MHz | 7.30 | 4.85 | 3.70 | 4.30 |
| 400 MHz | 10.40 | 7.00 | 5.20 | 6.10 |
| 1 GHz | 17.80 | 12.00 | 8.50 | 10.50 |
| Shield Coverage | 93% | 93% | | |

### Cable Specifications:

| | Twinax | | | | | | Triax | | | | Quad |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Designation | TWC-78-1 | TWC-78-2 | M17/176-00002 | TWAC-78-FL | TWC-124-1A | TWC-124-1 | TRC-50-1 | TRC-50-2 | TRC-75-1 | TRC-75-2 | QRC-78-2 |
| Impedance (Ohms) | 78±3 | 78±3 | 78±5 | 77±7 | 124±5 | 124±4 | 50±2 | 50±2 | 75±5 | 75±2 | 78±3 |
| Nominal Outer Dia. | 0.150 | 0.242 | 0.129 | 0.095 | 0.150 | 0.245 | 0.156 | 0.245 | 0.189 | 0.245 | 0.286 |
| Outer Braid Dia. | 0.108 | 0.195 | 0.102 | 0.070 | 0.105 | 0.195 | 0.121 | 0.210 | 0.150 | 0.205 | 0.240 |
| Core Outer Dia. | 0.088 | 0.154 | 0.084 | 0.052 | 0.085 | 0.162 | | | | | 0.156 |
| Dielectric Outer Dia. | 0.044 | 0.076 | 0.042 | 0.026 | 0.043 | 0.080 | 0.047 | 0.116 | 0.073 | 0.116 | 0.079 |
| Inner Braid Outer Dia. | | | | | | | 0.069 | 0.146 | 0.093 | 0.146 | 0.170 |
| Inner Jacket Outer Dia. | | | | | | | 0.101 | 0.175 | 0.130 | 0.175 | 0.230 |
| Conductor Outer Dia. | 0.0220 | 0.0370 | 0.0240 | 0.0150 | 0.0120 | 0.0220 | 0.0150 | 0.0370 | 0.0120 | 0.0185 | 0.0400 |
| Minimum Bend Radius | 1.50 | 1.25 | 1.50 | 1.25 | 1.50 | 1.25 | 0.75 | 1.25 | 1.00 | 1.25 | 1.25 |
| Max. Opr. VDC | 0.6KV | 2KV | | | 0.6KV | 2KV | 2KV | 6KV | 2KV | 6KV | |
| Max. Opr. Vac. (RMS) | 0.3KV | 1KV | 1KV | | 0.3KV | 1KV | 1KV | 2KV | 1KV | 2KV | 2KV |
| Capacitance pf/Ft (Mz) | 20.30 | 19.70 | 24.00 | 23.00 | 12.40 | 12.30 | 29.50 | 32.00 | 20.00 | 20.50 | 24.50 |
| Cond. Loop Res. (Ω/M) | 179.00 | 19.00 | 48.00 | 146.00 | 570.60 | 56.80 | | | | | 17.90 |
| Atten. db/100 ft: | | | | | | | | | | | |
| 1 MHz | 2.000 | 0.600 | 1.40 Max. | 2.000 | 3.250 | 0.540 | 2.800 | 0.500 | 0.900 | 0.480 | 1.000 |
| 3 MHz | 3.000 | 1.000 | 2.100 | | 4.400 | 0.920 | 3.100 | 0.800 | 1.300 | 0.880 | 1.600 |
| 4 MHz | 3.500 | 1.200 | 2.400 | | 4.800 | 1.060 | 3.300 | 0.900 | 1.500 | 1.010 | |
| 5 MHz | 4.000 | 1.400 | 2.800 | | 5.200 | 1.180 | 3.400 | 1.100 | 1.700 | 1.100 | 2.000 |
| 7 MHz | 4.500 | 1.600 | 3.500 | | 5.600 | 1.400 | 3.700 | 1.300 | 1.900 | 1.300 | 2.300 |
| 10 MHz | 5.300 | 2.000 | 4.50 Max. | 6.500 | 5.900 | 1.650 | 4.100 | 1.500 | 2.400 | 1.500 | 2.800 |
| 20 MHz | 7.50 | 2.80 | | | 8.30 | 2.30 | 5.500 | 2.30 | 3.60 | 2.30 | 3.10 |
| 30 MHz | 9.20 | 3.50 | | | 10.20 | 2.80 | 7.00 | 2.90 | 4.50 | 2.90 | 4.00 |
| 40 MHz | 10.60 | 4.10 | | | 11.80 | 3.20 | 7.50 | 3.40 | 5.40 | 3.30 | 4.60 |
| 50 MHz | 11.90 | 4.60 | | | 13.20 | 3.60 | 9.10 | 3.90 | 6.10 | 3.60 | 5.20 |
| 100 MHz | 16.80 | 6.90 | | | 18.70 | 5.10 | 14.00 | 5.80 | 9.70 | 5.20 | |
| 200 MHz | 23.70 | 9.90 | | | 26.40 | 7.20 | 22.00 | 8.80 | 16.50 | 7.60 | |
| 500 MHz | 37.50 | 15.40 | | | 41.70 | 11.40 | 40.00 | 15.30 | 28.50 | 10.80 | |
| 700 MHz | 44.30 | 18.30 | | | 49.40 | 13.50 | 50.00 | 18.00 | 36.00 | 14.70 | |
| 1 GHz | 53.00 | 21.80 | | | 59.00 | 16.20 | 63.00 | 23.00 | 45.00 | 17.60 | |
| Shield Coverage | 93% | 93% | 90% | 90% | 93% | 93% | 93% | 93% | 93% | 93% | 93% |
| Twist per Ft. | 8.0 | 4.0 | 13.0 | 16.0 | 8.0 | 4.0 | | | | | 4.1 |


TROMPETER ELECTRONICS, INC. VISA MasterCard (818) 707-2020 • FAX (818) 706-1040

# CABLE MANUFACTURER'S & CABLE GROUP NUMBER TABLE

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| ACI | 3-4112AT | • | - | TR | - | - | - | |
| ACOME | N1472A | - | • | C | - | - | - | |
| AIR FORCE | 8712812 | 10 | 10 | TW | - | - | - | |
| ALCATEL | L910/34 | • | • | C | - | - | - | |
| ALPHA | 1450/16 | • | - | TW | - | - | - | |
| | 2818 | 8 | - | TW | - | - | - | |
| | 2827/2 | 29 | 207 | TW | DATA | .120 | .031 | A |
| | 2834 | • | - | C | - | - | - | |
| | 2834/2 | 45 | - | TW | DATA | .137 | .032 | |
| | 9158 | 1 | 011 | C | - | - | - | |
| | 9180 | 4 | 008 | C | - | - | - | |
| | 9187A | 36 | 007 | C | 75 | .105 | .010 | |
| | 9804 | 41 | - | C | 75 | .275 | .040 | |
| | 9807 | 51 | - | C | - | - | - | |
| | 9814C | - | 213 | TW | - | - | - | |
| | 9818 | 8 | - | TW | - | - | - | |
| | 9820 | • | - | TW | 124 | .440 | .051 | |
| | 9851C | • | - | C | - | - | - | |
| | 9851F | 50 | - | C | - | - | - | |
| | 9858 | - | 011 | C | - | - | - | |
| | 9859 | - | • | C | - | - | - | P |
| AMDAHL | 215-900-000 | 5A | - | C | 100 | .075 | .012 | |
| AMPEX | 616-569 | 36 | 007 | C | 75 | .110 | .015 | |
| AMPHENOL | 21-204 | 42 | - | TR | - | - | - | |
| | 21-597X1 | • | - | C | - | - | - | |
| | 82-5588 | 8 | - | TW | 100 | .330 | .039 | |
| AMPHENOL CANADA | 21-1060 | 6 | 016 | C | - | - | - | |
| | 621-446-795 | 6 | - | C | - | - | - | |
| ANACONDA | 2SWU-1 | • | - | TR | - | - | - | |
| ASHLAND OIL | | 0 | - | TW | - | - | - | |
| ASTRO INDUSTRIAL | 1414 | 33 | - | TR | - | - | - | |
| ASTRO LAB | 32000 | 21 | - | C | - | - | - | |
| AT&T (W.E.CO) | 16PEVL | 12 | - | TW | 124 | .460 | .051 | |
| | 724 | 6 | 016 | C | 75 | .304 | .033 | C |
| | 728 | 6 | 016 | C | 75 | .304 | .033 | C |
| | 730A | 2B | 015 | C | 75 | .255 | .025 | C |
| | 731 | 2 | 015 | C | 75 | .248 | .023 | C |
| | 734A | 63 | 025 | C | 75 | .236 | .031 | |
| | 735A | - | 026 | C | 75 | .125 | .016 | C |
| | 754E | 10 | - | TW | 124 | .420 | .040 | |
| | 760A | 11 | - | TW | 124 | .308 | .025 | |
| | 761A | 30 | 027 | TW | 124 | .215 | .021 | |
| | KS-19224L2 | - | 027 | C | 75 | .116 | .011 | |
| BELDEN | 1162A | 8 | - | TW | - | - | - | |
| | 1163A | 6 | 016 | C | - | - | - | |
| | 1163ACNFRMBL085 | 6 | - | C | 75 | .305 | .031 | |
| | 1164ARGB | - | 009 | C | - | - | - | |
| | 1167ARGBS | 105 | 127 | C | - | - | - | |
| | 1168ACNFRMBL141 | 141 | - | C | 50 | .141 | .037 | T |
| | 1263A | 21 | • | C | - | - | - | |
| | 8208 | 7 | - | TW | - | - | - | |
| | 8212 | 2 | 014 | C | 75 | .242 | .032 | C |
| | 8213 | 6A | - | C | 75 | .405 | .064 | D |
| | 8214 | • | - | C | - | - | - | |
| | 8216, RG174 TYPE | 5 | 003 | C | 50 | .100 | .019 | |
| | 8218 | 4 | 009 | C | 75 | .150 | .017 | |
| | 8219 | 1 | - | C | 50 | .195 | .037 | |
| | 8221 | 2 | 013 | C | 80 | .242 | .025 | C |
| | 8227 | 8 | - | TW | 100 | .330 | .039 | |
| | 8228 | 34 | - | C | 75 | .242 | .040 | |
| | 8232 | 13A | - | TR | 75 | .315 | .032 | |
| | 8233 | 14 | - | TR | 75 | .475 | .064 | |
| | 8237 | 6A | - | C | 52 | .405 | .085 | |
| | 8240 | 1 | - | C | 53 | .195 | .032 | |
| | 8241 | 2 | 013 | C | 73 | .242 | .025 | C |
| | 8259 | 1 | - | C | 50 | .195 | .036 | |
| | 8261 | 6A | - | C | 75 | .405 | .049 | |
| | 8263, RG59B/U TYPE | 2 | 013 | C | 75 | .242 | .023 | |
| | 8279 | 2A | 019 | C | 75 | .220 | .025 | |
| | 8281 | 6 | 016 | C | 75 | .304 | .032 | C |
| | 8422 | 9 | - | TW | DATA | .231 | .025 | |
| | 8441 | 30 | - | TW | DATA | .210 | .025 | |
| | 8451 | - | 210 | TW | DATA | .140 | .031 | |
| | 8761 | 28 | - | Q | - | - | - | |
| | 8946 | • | - | TR | - | - | - | |
| | 9054 | 2 | - | C | - | - | - | |
| | 9060 | 41 | - | C | - | - | - | |
| | 9068 | 4 | 009 | C | - | - | - | |
| | 9104 | 2 | - | C | 75 | .243 | .032 | |
| | 9112 | 2 | - | C | 75 | .242 | .032 | |
| | 9114 | 41 | - | C | 75 | .275 | .040 | C |
| | 9116 | 41 | - | C | - | - | - | |
| | 9141(WE724) | 6 | 016 | C | 75 | .304 | .033 | |
| | 9145, RG59/U TYPE | 2A | 014 | C | 75 | .242 | .032 | |
| | 9146 | 4 | - | C | - | - | - | |
| | 9167 | 2 | - | C | - | - | - | |
| | 9168 | 41 | - | C | - | - | - | |
| | 9170 | 4 | - | C | - | - | - | |

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| BELDEN | 9171 | 2 | - | C | - | - | - | |
| | 9192 | • | - | TR | - | - | - | |
| | 9207 (VR15662) | 8 | - | TW | 100 | .330 | .039 | |
| | 9209 | 2A | 013 | C | 75 | .220 | .022 | |
| | 9221 | 5 | - | C | 75 | .102 | .012 | |
| | 9222 | 7 | - | TR | 50 | .242 | .039 | J |
| | 9225 | 6B | - | C | 50 | .425 | .089 | |
| | 9226 | 3 | - | C | 50 | .212 | .035 | |
| | 9228, RG62A/U TYPE | 2 | - | C | 93 | .242 | .025 | C |
| | 9231 (WE729) | 6 | 016 | C | 75 | .304 | .032 | |
| | 9232 | • | - | TR | - | - | - | |
| | 9234 | 2 | 014 | C | 75 | .242 | .032 | |
| | 9242 | 2 | - | C | 80 | .242 | .025 | |
| | 9243, RG-59DS TYPE | 2 | 014 | C | 75 | .242 | .032 | |
| | 9248 | 41 | 020 | C | 75 | .270 | .036 | |
| | 9250, RG-22B TYPE | 10 | - | TW | 95 | .420 | .046 | |
| | 9252 | 4 | - | C | 50 | .160 | .030 | |
| | 9254 | 4 | - | C | - | - | - | |
| | 9258 | • | - | C | - | - | - | |
| | 9259, RG-59/U TYPE | 2 | 014 | C | 75 | .242 | .031 | |
| | 9264 | • | - | C | - | - | - | |
| | 9265CX Side-RG59/U | 2 | 013 | C | 75 | .242 | .031 | |
| | 9266 | • | • | C | - | - | - | |
| | 9267 | • | • | TR | - | - | - | |
| | 9268 | 2B | 018 | C | 93 | .260 | .025 | C |
| | 9269, RG62A/U TYPE) | 2 | 013 | C | 93 | .242 | .025 | |
| | 9271 | - | • | TW | - | - | - | |
| | 9272 | 9 | 213 | TW | 78 | .242 | .037 | |
| | 9273, RG223 TYPE | 3 | 012 | C | 50 | .216 | .035 | |
| | 9274, RG59/U TYPE | 2 | - | C | 75 | .242 | .032 | |
| | 9283 | 41 | - | C | - | - | - | |
| | 9284 | 41 | - | C | 75 | .275 | .040 | |
| | 9290 | - | • | C | - | - | - | |
| | 9291 | 2 | 013 | C | - | - | - | |
| | 9292 | 6A | - | C | 75 | .405 | .064 | D |
| | 9301 | 2 | - | C | 75 | .242 | .032 | |
| | 9302 | 086 | - | C | - | | | |
| | 9307 | 086 | - | C | 50 | .085 | .011 | T |
| | 9308 | 086 | - | C | 75 | .085 | .020 | T |
| | 9311 | 1 | - | C | - | - | - | |
| | 9386 | 41 | - | C | 75 | .275 | .040 | |
| | 9414 | • | - | C | - | - | - | |
| | 9448 | 2A | - | C | - | - | - | |
| | 9463 | 9 | - | TW | - | - | - | |
| | 9555 (DUALCOAX) | 2 | - | C | 75 | .242 | .023 | |
| | 9587 | 41 | - | C | - | - | - | |
| | 9589 | 2A | - | C | 75 | .242 | .032 | B |
| | 9592 | 2 | - | C | 75 | .242 | .032 | B |
| | 9659 | 2 | - | C | - | - | - | |
| | 9688 | • | - | TR | - | - | - | |
| | 9729 | 8 | - | TW | - | - | - | |
| | 9738 | 8 | - | TW | - | - | - | |
| | 9850 | 6B | - | C | 75 | .425 | .048 | |
| | 9859 | 9 | 213 | TW | 78 | .235 | .038 | |
| | 9860 | 46 | - | TW | 124 | .440 | .051 | |
| | 9861, RG212 TYPE | 6E | - | C | 50 | .332 | .057 | |
| | 9880 | 48 | - | C | 50 | .405 | .086 | |
| | 9888 | 14A | - | TR | 50 | .480 | .108 | |
| | 9907 | 1 | 011 | C | - | - | - | |
| | 9913 | • | - | C | - | - | - | |
| | 9914 | • | - | C | - | - | - | |
| | 81553 | 47 | 201 | TW | 78 | .129 | .024 | P |
| | 82120 | 34 | - | C | - | - | - | |
| | 83264 | 5 | - | C | - | - | - | |
| | 83265 | 5A | - | C | - | - | - | |
| | 83266 | 22 | 008 | C | - | - | - | |
| | 83267 | 36 | - | C | - | - | - | |
| | 83310 | 29 | 207 | TW | DATA | .120 | .031 | A |
| | 83318 | 29 | 204 | TW | DATA | .132 | .025 | A |
| | 83552 | 35 | - | TW | - | - | - | |
| | 86262, RG-62/U TYPE | 2A | 019 | C | 75 | .220 | .025 | P |
| | 87108 | 2A | 023 | C | - | - | - | |
| | 87120, RG-6/U TYPE | 52 | 024 | C | 75 | .256 | .040 | P |
| | 88232 | • | - | TR | - | - | - | |
| | 88240, RG-58/U TYPE | 1 | 021 | C | 50 | .178 | .037 | |
| | 88241(BRN), RG-59/U | 2A | 022 | C | 75 | .200 | .023 | P |
| | 88241(GRY, )RG-59/U | 2A | 022 | C | 75 | .193 | .023 | P |
| | 88281 | 51 | 016 | C | 75 | .304 | .032 | P |
| | 88641 | 23 | - | TR | - | - | - | |
| | 89108, RG-59/U TYPE | 2A | 023 | C | 75 | .218 | .032 | P |
| | 89120 | 52 | 024 | C | 75 | .253 | .040 | P |
| | 89162 | 2A | 019 | C | - | - | - | |
| | 89207 | 54 | - | TW | 100 | .282 | .039 | P |
| | 89259, RG-59/U TYPE | - | - | C | - | .218 | .030 | X |
| | 89269 | 2A | 022 | C | 93 | .222 | .025 | N,P |
| | 89272 | 55 | - | TW | 78 | .220 | .039 | P |
| | 89555 (DOUBLE) | 53 | 019 | C | 75 | .230 | .023 | P |
| | 89880 ETHERNET | 50 | - | C | 50 | .375 | .086 | L,P |

**Cable Table Notes Page 65 - See Connector/Cable Compatibility Tables Pages 33 & 50**

# CABLE MANUFACTURER'S & CABLE GROUP NUMBER TABLE

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| BELDEN | 89907 | 21 | • | C | - | - | - | |
| | AWMFR-1 | • | - | C | - | - | - | |
| | I20423 | 2 | - | C | - | - | - | |
| | M9815 | 8 | - | TW | - | - | - | |
| | YM-15338 | 1 | 016 | C | 52 | .190 | .036 | |
| | YM-23930 | - | 014 | C | - | - | - | |
| | YR-14910 | 29 | - | TW | - | - | - | |
| | YR-15161 | 29 | - | TW | - | - | - | |
| | YR-19218 | 29 | - | TW | - | - | - | |
| | YR-19641 | • | - | C | - | - | - | |
| | YR-19747 | • | - | C | - | - | - | |
| | YR-21153 | • | • | C | - | - | - | |
| | YQ-11483 | 5 | - | C | - | - | - | |
| BELL LABS | G243630-1 | 4 | - | C | 50 | .155 | .010 | |
| | G243630-2 | 4 | - | C | 50 | .155 | .010 | |
| | WP19681-L-2 | 5 | - | C | - | - | - | |
| BELL CORE | RG6 ( TYPE) | - | 022 | C | - | - | - | |
| BERK-TEK | 640114 (DC58-NET) | 21 | - | C | - | - | - | |
| | BTDC-59-TT | 2 | 022 | C | - | - | - | |
| | BTDC-59D-TT | 2A | - | C | 75 | .242 | .023 | |
| | BTX-0113-100175 | 43 | - | TR | 100 | .175 | .011 | |
| BICC | 2003 | • | - | C | - | - | - | |
| BIW (NUCLEAR GR) | 11735-C-G24 (RG-59) | 34 | - | C | 75 | .242 | .025 | |
| BOEING | 37-112-1 | 32 | - | TR | — | | | |
| | 380-10045 | 60 | 305 | TR | 95 | .189 | .012 | |
| BOSTON INSLTD | 11735-C-G24 | 34 | - | C | - | - | - | |
| BRAND-REX | 71124Y18978 | • | - | TW | - | - | - | |
| | 736211 | • | - | TW | - | - | - | |
| | A-779 | 5 | - | C | 75 | .090 | .010 | |
| | B-749 | 44 | - | C | 75 | .080 | .012 | |
| | CS75146 | • | - | C | - | - | - | |
| | LS2SL | • | - | TW | - | - | - | |
| | T-378 | 6 | 016 | C | 75 | .312 | .031 | C |
| | T-385 | 44 | - | C | 75 | .080 | .012 | C |
| | T-10971 | 24 | 221 | TW | 77 | .161 | .024 | J |
| | T-13295 | 42 | - | TR | - | - | - | |
| | T-2948 | 26 | - | TR | 75 | .165 | .012 | |
| | T-546 | • | - | TR | - | - | - | |
| BRITSH TELEPHONE | BT2003 | • | - | C | - | - | - | |
| CALMONT | 4141 | 24 | 211 | TW | 160 | .168 | .012 | |
| CANARE | 301 | - | 009 | C | - | - | - | |
| | 3C2VS | • | - | C | - | - | - | |
| | 5C2VS | 6 | 016 | C | 75 | .292 | .031 | |
| | LV61S | 2 | 013 | C | 75 | .242 | .023 | |
| | LV77 | 6 | - | C | DATA | .304 | .032 | |
| | LV77S | - | 016 | C | - | - | - | |
| CAROL | C1103, RG59/U | 2 | 013 | C | - | - | - | |
| | C1163, RG62/U | 2 | 013 | C | - | - | - | |
| CASCO | 2C227, NPCSN | 45 | - | TW | - | - | - | |
| CDC | 15013640-42 | • | - | C | - | - | - | |
| | YR-20582 | • | - | C | - | - | - | |
| CES | 1805-0229E39829 | - | - | - | - | - | - | X |
| CHAMPLAIN | 51-04417, (RG-62) | 2 | - | C | 98 | .232 | - | P |
| | 51-04423 | • | - | TR | - | - | - | |
| | 51-04496 | 47 | - | TW | - | - | - | |
| | 51-04496 | 47 | - | TW | - | - | - | |
| | 51-05091 | 58 | 217 | Q | 77 | .145 | .025 | S |
| | 5M2022-001 | - | 206 | TW | - | - | - | |
| | 5M2022-003 | • | - | TW | - | - | - | |
| | 81-00440 | • | - | TW | - | - | - | |
| | 81-00486 | • | - | TR | - | - | - | |
| | 81-00487 | - | 007 | C | - | - | - | |
| | 81-00487 | - | 007 | C | - | - | - | |
| | 81-00558 | • | - | TR | - | - | - | |
| | RG-62 TYPE | 2 | 013 | C | 93 | .242 | - | |
| | RG62 TYPE | 2 | 013 | C | 93 | .242 | - | |
| | ST5M1212-002 | 29 | 202 | TW | 70 | .150 | .022 | |
| COAXCO | 1102 | 23 | - | TR | 40 | .140 | .020 | |
| COMM/SCOPE | 0222 | 4 | • | C | 75 | .155 | .020 | |
| | 0232 | 4 | • | C | 75 | .155 | .020 | |
| | 0259 | - | - | C | 75 | .285 | .040 | X |
| | 2041 | - | - | C | 75 | .200 | .022 | X |
| | 2041K | - | - | C | 75 | .200 | .022 | X |
| | 2045 | - | - | C | 75 | .204 | .031 | X |
| | 2045K | - | - | C | 75 | .204 | .031 | X |
| | 2100 | - | - | C | 53 | .170 | .031 | X |
| | 2100K | - | - | C | 53 | .170 | .031 | X |
| | 2250 | - | - | C | 93 | .207 | .025 | X |
| | 2250K | - | - | C | 93 | .207 | .025 | X |
| | 2251 | - | - | C | 93 | .207 | .025 | X |
| | 2251K | - | - | C | 93 | .207 | .025 | X |
| | 2275 | - | - | C | 75 | .251 | .040 | X |
| | 2275K | - | 024 | C | 75 | .251 | .040 | |
| | 2279 | - | 024 | C | 75 | .240 | .040 | |
| | 2279K | - | 024 | C | 75 | .240 | .040 | |
| | 2280 | - | - | C | 50 | .375 | .086 | X |
| | 2280K | - | - | C | 50 | .366 | .086 | X |
| | 2290 | - | - | C | 100 | .271 | .031 | X |

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| COMM/SCOPE | 2290K | - | - | C | 100 | .271 | .031 | X |
| | 2525 | - | - | C | 75 | .290 | .031 | X |
| | 2525K | - | - | C | 75 | .290 | .031 | X |
| | 3130 | - | - | C | 53 | .195 | .031 | X |
| | 3135 | - | - | C | 50 | .195 | .031 | X |
| | 3139 | - | - | C | 50 | .195 | .031 | X |
| | 3250 | - | - | C | 50 | .405 | .086 | X |
| | 4012 | - | - | TW | 78 | .210 | .031 | X |
| | 4012K | - | - | TW | 78 | .210 | .031 | X |
| | 5535 | - | 026 | C | 75 | .125 | .016 | |
| | 5550 | - | - | C | 75 | .242 | .025 | X |
| | 5552 | - | - | C | 75 | .242 | .031 | X |
| | 5555 | - | - | C | 80 | .242 | .025 | X |
| | 5560 | - | - | C | 73 | .242 | .025 | X |
| | 5565 | - | - | C | 75 | .242 | .031 | X |
| | 5567 | - | - | C | 75 | .242 | .031 | X |
| | 5568 | 63 | 025 | C | 75 | .236 | .031 | |
| | 5572 | - | - | C | 75 | .242 | .031 | X |
| | 5715 | 41 | 020 | C | 75 | .272 | .040 | |
| | 5725 | - | - | C | 75 | .272 | .040 | X |
| | 5903 | - | - | C | 75 | .405 | .064 | X |
| | 5908 | 6A | - | C | 75 | .405 | .040 | |
| | 5909 | - | - | C | 75 | .405 | .040 | X |
| | 5940 | 6A | - | C | 75 | .405 | .064 | |
| | 6200 | - | - | C | 93 | .242 | .025 | X |
| | 6605 | - | - | C | 93 | .260 | .025 | X |
| | 750C | - | - | C | 75 | .304 | .031 | X |
| | 7510 | - | 016 | C | 75 | .304 | .031 | |
| | 7723 | - | - | C | 50 | .212 | .036 | X |
| | 7810 | - | - | TR | 75 | .325 | .031 | X |
| | 7815 | - | - | TR | .50 | .480 | .090 | X |
| | 7820 | - | - | TR | 75 | .475 | .090 | X |
| | 7901 | - | - | TW | 100 | .325 | .031 | X |
| | 9012 | - | - | TW | 78 | .242 | .025 | X |
| CONSOLIDATED | 4407 | • | - | C | - | - | - | |
| | 4460 | • | - | TR | - | - | - | |
| | 4463, (RG58) | 42 | - | TR | 50 | .285 | .036 | |
| | 4463, (RG58) | 42 | - | TR | 50 | .285 | .036 | |
| | 4481 | • | - | TR | - | - | - | |
| | SB36456 | • | - | TR | - | - | - | |
| D&S NORTECH | CDC-5013640-42 | • | - | C | - | - | - | |
| DABURN | D-43M | 25 | - | TW | 124 | .265 | .019 | |
| DEC | FEP17-01246-01/02/03 | 3 | 011 | C | - | - | - | |
| | FEP17-0246-01/02 | 3 | 011 | C | - | - | - | |
| | FEP17-0248-01/02 | 3 | 011 | C | - | - | - | |
| | PVC17-01248-01/02/03 | 3 | 011 | C | - | - | - | |
| DOD | DOD-DNA-RF-21 | 9 | - | TW | - | - | - | |
| | DOD-DNA-RF-21 | 9 | - | TW | - | - | - | |
| ERICSON | TZC75005 | - | • | C | - | - | - | |
| | TZC-75005 | • | • | C | - | - | - | |
| ESSEX | 1000 | 6A | - | C | - | - | - | |
| | 1000 | 6A | - | C | 50 | .405 | .085 | |
| | 1000 | 6A | - | C | - | - | - | |
| | 2001 | 7 | - | TR | - | - | - | |
| | 2001 | 7 | - | TR | - | - | - | |
| | 21-004 | 6A | - | C | 50 | .405 | .085 | |
| | 21-025 | 2 | - | C | 73 | .242 | .025 | |
| | 21-204 | 42 | - | TR | 50 | .285 | .036 | |
| | 21-529 | 4 | - | TR | 75 | .460 | .049 | |
| | 21-537 | 1 | 011 | C | 50 | .195 | .036 | |
| | 21-541 | 2 | 013 | C | 73 | .242 | .025 | |
| | 21-583 | 5 | - | TR | 52 | .490 | .085 | |
| | 21-597 | 4 | 009 | C | 75 | .150 | .017 | |
| | 21-780 | 6B | - | C | 50 | .420 | .087 | |
| | 21-795 | 2 | - | C | 75 | .242 | .023 | |
| | 21-950 | 6 | - | TW | 124 | .615 | .051 | |
| | 421-098 | 22 | 008 | C | 95 | .145 | .012 | |
| | 421-111 | 4 | 008 | C | 95 | .155 | .012 | |
| | 421-176 | 1 | - | C | 50 | .195 | .039 | |
| | 621-100 | 6A | - | C | 75 | .405 | .064 | D |
| | 621-106 | 7 | - | TR | 72 | .242 | .025 | |
| | 621-243 | 41 | - | C | 75 | .270 | .040 | |
| | 621-284 | 41 | - | C | 75 | .270 | .040 | |
| | 621-715 | 1 | - | C | 75 | .195 | .025 | |
| EXTRON | 22-021-01 | 5 | 003 | C | - | - | - | |
| FARINON | 003-R003 | 37 | - | C | 75 | .160 | .020 | |
| FELTON & GUILEAUME | 1.0S/4.5S | • | - | TW | - | - | - | |
| | 1.4S/6.6S | • | - | TR | - | - | - | |
| FILECA | F1703-51 | - | 217 | C | - | - | - | |
| | F1709-46 | • | - | C | - | - | - | |
| | F2703-51 | - | 217 | TW | - | - | - | |
| FILOTEX | 63247 | - | 212 | TW | 125 | .179 | .025 | |
| | EDE62385 | - | 009 | C | - | - | - | |
| | EDE62385 | • | 009 | C | - | - | - | |
| GE | 5930273-1 | • | - | TW | - | - | - | |
| | 7531352P1 | 31 | - | C | - | - | - | |
| | 7531352P1 | 31 | - | C | - | - | - | |
| GENERAL | 2SWU-1 | • | - | TW | - | - | - | |

**Cable Table Notes Page 65 - See Connector/Cable Compatibility Tables Pages 33 & 50**

# CABLE MANUFACTURER'S & CABLE GROUP NUMBER TABLE

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| GENERAL | T-43 | 10 | - | TW | 124 | .420 | .040 | |
| | T-43M | 25 | - | TW | 124 | .265 | .019 | |
| | V1-AL | 12 | - | TW | 124 | .460 | .051 | |
| | V1-DSAL | 28 | - | Q | 124 | .530 | .050 | |
| | V2-AL | • | - | TW | - | - | - | |
| GENERAL INSTRMNT | 0232 | 4 | - | C | - | - | - | |
| | 2104 | • | • | C | - | - | - | |
| GENERAL WIRE PROD | E102194 | - | 214 | TW | - | - | - | |
| GEPCO | 7174 | - | - | C | 50 | .101 | .019 | X |
| | RGBS809 (3 COAX) | - | 009 | C | 75 | .150 | .021 | |
| | RGBS809 (4 COAX) | - | 009 | C | 75 | .150 | .021 | |
| | RGBS809 (5 COAX) | - | 009 | C | 75 | .150 | .021 | |
| | V618J59 | - | 013 | C | 75 | .242 | .023 | |
| | V618M59 | - | 013 | C | 75 | .242 | .023 | |
| | V618M59TK | - | 105 | C | 75 | .200 | .023 | |
| | VDFM809 | - | 009 | C | 75 | .150 | .021 | |
| | VDFM809 (2 COAX) | - | - | C | 75 | .150 | .021 | X |
| | VE61859 | - | 014 | C | 75 | .242 | .030 | |
| | VFM809 | - | 009 | C | 75 | .150 | .021 | |
| | VP6000 | - | 016 | C | 75 | .304 | .032 | |
| | VP618PE | - | 016 | C | 75 | .304 | .032 | |
| | VP618PVC | - | 016 | C | 75 | .304 | .032 | |
| | VP618TK | - | 105 | C | 75 | .278 | .032 | |
| | VPM1000 | - | 013 | C | 75 | .242 | .023 | |
| | VPM2000 | - | 014 | C | 75 | .242 | .032 | |
| | VPM2000TK | - | 105 | C | 75 | .200 | .032 | |
| | VPM618 | - | 022 | C | 75 | .220 | .027 | |
| | VSM618 | - | 009 | C | 75 | .150 | .017 | |
| GERMANY | GEEIA | 25 | - | TW | 124 | .265 | .019 | |
| GORE | 05202 (UK) | - | 201 | TW | - | - | - | |
| | 190 | • | - | C | - | - | - | |
| | C06C032 | 44 | - | C | 75 | .075 | .019 | |
| | CXA-8206 | • | - | TW | - | - | - | |
| | CXN-1223 | • | - | TW | - | - | - | |
| | CXN-1267 | • | - | TR | - | - | - | |
| | CXN-1318 | • | - | C | - | - | - | |
| | CXN-1362 | 36 | - | C | 50 | .101 | .031 | |
| | CXN-1363A | 21 | - | C | 50 | .155 | .050 | |
| | CXN-1366 | • | - | C | - | - | - | |
| | CXN-1384 | • | - | C | - | - | - | |
| | CXN-1426A | - | • | C | - | - | - | |
| | CXN-1428A | • | - | C | - | - | - | |
| | CXN-1519 | • | - | C | - | - | - | |
| | CXN-1549 | • | - | TR | - | - | - | |
| | CXN-1583 | • | - | C | - | - | - | |
| | CXN-1666 | • | - | TR | - | - | - | |
| | CXN-1701A | • | - | C | - | - | - | |
| | CXN-1702A | • | - | C | - | - | - | |
| | CXN-1722 | • | - | C | - | - | - | |
| | CXN-1735 | • | - | TR | - | - | - | |
| | CXN-1851 | • | - | C | - | - | - | |
| | CXN-1920 | • | - | TW | - | - | - | |
| | CXN-2223 | 24 | - | TW | - | - | - | |
| | CXN-2280A | • | - | C | 50 | - | - | |
| | CXN-2317 | • | - | C | 50 | - | - | |
| | DXSN-1577 | • | - | TW | - | - | - | |
| | GSCI-620 | • | - | TW | 50 | - | - | |
| | SR-AE-0004/1 | • | - | TW | 50 | - | - | |
| GRUMMAN | GC875GBI | 57 | 302 | TR | 50 | .164 | .033 | A |
| | GC875GC1 | 56 | 301 | TR | 95 | .164 | .012 | A |
| | GC875GP1 | 31 | 006 | C | 50 | .128 | .020 | |
| | GC875LNI | 59 | - | TW | 75 | .167 | .020 | |
| | GC875MS1-22 | - | 304 | TR | N/A | N/A | N/A | |
| | GC875PD1 | 5A | - | C | 50 | .063 | .012 | |
| | GC875RM1 | 45 | 204 | TW | 78 | .144 | .025 | |
| | GC875RR1 | 33 | 220 | Q | 77 | .179 | .025 | J |
| | GC875TM24H | 58 | 217 | Q | 77 | .160 | .025 | S |
| HABIA | 31482-009-02 | 47 | - | TW | - | - | - | |
| | C000216 | - | 009 | C | - | - | - | |
| | R66-DGC | - | • | C | - | - | - | |
| | RG62F(CB)F | - | 013 | C | - | - | - | |
| HARBOUR | 11-0007 | 5 | - | C | - | - | - | |
| | 11-0007 | 31 | - | C | 50 | .128 | .020 | |
| | U062FRG-2222-ITS9-NAT | 2A | - | C | - | - | - | |
| HARRIS | SM-A-975015 | • | - | TR | - | - | - | |
| HAVEG INDUSTRIES | 51-04416 | - | 223 | TW | 68 | .104 | .019 | |
| | 51-04423 | • | - | TR | - | - | - | |
| HEWLETT PACKARD | 8120-0049 | 4 | - | C | DATA | .155 | .010 | |
| | 8120-0102 | 5 | - | C | - | - | - | |
| | 8120-0789 | 5B | - | C | 50 | .110 | .015 | |
| | 8120-1105 | 5B | 002 | C | 50 | .110 | .015 | |
| | 8120-1252 | 5B | - | C | - | - | - | |
| | 8120-1289 | 2B | 015 | C | 75 | .255 | .025 | |
| | 8120-1380 | 5B | - | C | - | - | - | |
| | 8120-9026 | 5B | - | C | 50 | .110 | .015 | |
| HITEMP | 117P80660 | 50 | - | C | 50 | .375 | .086 | |
| | CEO5900 | - | 013 | C | 75 | .210 | .025 | A,P |
| | RG62A/U | • | - | C | - | - | - | |

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| HITEMP | SP50-738CWSSTJ | 5A | - | C | 50 | .085 | .012 | P |
| HOEI SNAGYO | 3C2V | • | 016 | C | - | - | - | |
| | 5C2V | • | 016 | C | - | - | - | |
| HUGHES | 710855-35 | • | - | TR | - | - | - | |
| | 710922-13 | • | - | TW | - | - | - | |
| | HMS-1480/2 | 45 | - | TW | - | - | - | |
| | HMS2-1149/2 | • | - | TW | - | - | - | |
| | HMS2-1149/27 | • | - | TW | - | - | - | |
| | HMS2-1149/28 | • | - | Q | - | - | - | |
| | HMS2-1149/75 | • | - | TR | - | - | - | |
| | HMS2-1149/76 | - | • | TW | - | - | - | |
| | HMS2-1149/78 | - | 223 | TW | 68 | .104 | .019 | |
| IBM | 010-7362061/4885844 | • | - | TW | - | - | - | |
| | 4885584 | - | 022 | C | 93 | .222 | .025 | R |
| | 7362211 | 8 | - | TW | 100 | .330 | .039 | |
| INSULATED WIRE | 101 | 5 | - | C | - | - | - | |
| | 175 | • | - | C | - | - | - | |
| INTERCOMP | 1805-0199 | • | - | TW | - | - | - | |
| ITT | 14397 | 32 | - | TR | - | - | - | |
| JUDD WIRE | SS502401 | 5 | 003 | C | - | - | - | |
| KEITHLEY | SC-22 | 23 | - | TR | 40 | .140 | .020 | |
| KEITHLY INSTRUMENT | SC-103 | • | - | TW | - | - | - | |
| | SC-22 | 23 | - | TR | - | - | - | |
| KYLE | 09-40312 | • | - | TR | - | - | - | |
| LEONI | TZC75005 | • | - | C | - | - | - | |
| LOCKHEED | ABA | 29 | 206 | TW | DATA | .120 | .025 | A |
| LYNN CABLE | RGB307/U | • | - | C | - | - | - | |
| M/A-COM | 2250 (PLENUMAX) | 53 | 022 | C | - | - | - | |
| | 7810 | 13 | - | TR | - | - | - | |
| MADISON | 52514F | • | - | C | - | - | - | |
| | E47331 | • | - | TW | - | - | - | |
| MALCO | 1263-3301 | • | - | C | - | - | - | |
| | 293-3922-0000 | • | - | TR | - | - | - | |
| MANHATTAN | 4-BTDC-62-TT | • | - | C | - | - | - | |
| | M1112 | • | - | TW | - | - | - | |
| | M4207 | 6A | - | C | 75 | .405 | .048 | |
| | M4216 | 2B | 013 | C | 93 | .260 | .025 | |
| | M4227 | 9 | 213 | TW | - | - | - | |
| | M4772 | • | - | TW | - | - | - | |
| | RG59, 2CLP TYPE | - | • | C | - | - | - | |
| MARTIN MARIETTA | EG3722GS29 | • | - | TW | - | - | - | |
| | STME637-2 | - | 206 | TW | - | - | - | |
| MAXBRAID | PLENECON | 2A | - | C | - | - | - | |
| | RG58/U | 1 | 021 | C | - | - | - | |
| MC BRIDE | CCE597X | • | - | TR | - | - | - | |
| MC DONNELL DOUGLAS | 5M2022-001 | - | 206 | TW | - | - | - | |
| | 5M2022-003 | - | 204 | TW | - | - | - | |
| | 5M2142-001 | • | - | TR | - | - | - | |
| | 5M2397-001 | • | - | TR | - | - | - | |
| | 5M2397-002 | 23 | 303 | TR | - | - | - | |
| | ST5M1212-003 | • | - | TW | - | - | - | |
| | ST5M1284-001 | • | - | TR | - | - | - | |
| | ST5M1323 | • | - | TR | - | - | - | |
| MERCURY | DOD/DNARF21 | - | 214 | TW | - | - | - | |
| MICRODOT | 202-3808 | • | - | TW | - | - | - | |
| | 202-3853-009 | 29 | - | TW | - | - | - | |
| | 202-3927 | - | 208 | TW | - | - | - | |
| | 202-3927 | 27 | 208 | TW | 125 | .110 | .011 | |
| | 202-3932 | • | - | TW | - | - | - | |
| | 202-3934 | 24 | 211 | TW | 160 | .168 | .012 | |
| | 202-3942 | 27 | 209 | TW | 125 | .120 | .012 | |
| | 250-3804 | • | - | C | - | - | - | |
| | 250-3833 | 47 | - | TW | - | - | - | |
| | 250-3834 | 5A | - | C | 50 | .075 | .012 | |
| | 250-3836 | • | - | TW | - | - | - | |
| | 250-3884 | 23 | - | TR | 50 | .140 | .012 | |
| | 250-3902 | • | - | C | - | - | - | |
| | 250-3908 | • | - | C | - | - | - | |
| | 250-3937-0000 | • | - | TR | - | - | - | |
| | 250-3967 | 5 | - | C | 50 | .110 | .020 | |
| | 250-4021 | 5 | - | C | 50 | .116 | .020 | |
| | 250-4044 | 43 | - | TR | 50 | .175 | .032 | |
| | 250-4045 | 43 | - | TR | 50 | .175 | .032 | |
| | 250-4049 | • | - | C | - | - | - | |
| | 250-4063 | 5A | - | C | 50 | .085 | .012 | |
| | 250-4070 | • | - | TR | - | - | - | |
| | 250-4172 | • | - | C | - | - | - | |
| | 250-4180 | 5 | 004 | C | 50 | .110 | .019 | |
| | 250-4207 | • | - | C | - | - | - | |
| | 250-4208 | • | - | C | - | - | - | |
| | 250-4816-009 | 23 | - | TR | 50 | .140 | .012 | |
| | 275-3930 | 23 | - | TR | 75 | .140 | .012 | |
| | 275-3962 | 26 | - | TR | 75 | .165 | .012 | |
| | 275-3991/616-569 | 36 | 007 | C | 75 | .110 | .015 | |
| | 293-3902M | • | - | C | - | - | - | |
| | 293-3922 | 60 | 305 | TR | - | - | - | |
| | 293-3930 | 43 | - | TR | 100 | .175 | .011 | |
| | 293-3968 | 4 | 008 | C | 93 | .155 | .011 | |

**Cable Table Notes Page 65 - See Connector/Cable Compatibility Tables Pages 33 & 50**

# CABLE MANUFACTURER'S & CABLE GROUP NUMBER TABLE

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| MICRODOT | 295-3801 | 4 | 008 | C | 95 | .155 | .010 | |
| | 295-3802 | 4 | - | C | 95 | .144 | .011 | |
| | 295-3950 | 43 | - | TR | 95 | .175 | .012 | |
| | 295-3952 | 43 | - | TR | 95 | .175 | .012 | |
| | 295-3958 | • | - | C | - | - | - | |
| | 295-3995 | 56 | - | TR | - | - | - | |
| | 295-3996 | • | - | TR | - | - | - | |
| MIL-SPEC | M17/094-007179 | 5 | - | C | - | - | - | |
| | M17/113-RG-316/U | 5 | 003 | C | 50 | .102 | .020 | |
| | M17/116-RG307 | • | - | TR | - | - | - | |
| | M17/128 | 4 | 012 | C | - | - | - | |
| | M17/134-00001 | 7 | - | TR | 50 | .245 | .035 | |
| | M17/135-00001 | 4A | - | TR | 50 | .500 | .088 | |
| | M17/157-00001 | 4 | - | C | - | - | - | |
| | M17/163-00001 | 6A | - | C | 50 | .405 | .089 | |
| | M17/164-00001, 2 | 6B | - | C | 50 | .425 | .089 | |
| | M17/176-00002 | 47 | 201 | TW | 77 | .129 | .024 | |
| | M17/177-00001 | 60 | 305 | TR | 95 | .184 | .012 | |
| | M17/186-00001 | • | - | TW | - | - | - | |
| | M27500-22TE2T14 | 45 | 210 | TW | DATA | .137 | .032 | |
| | MC24643/33-OIUN/LS2 | | | | | | | |
| | SWU-1 (UNARMORED) | • | - | TW | - | - | - | |
| | RG-5B/U | 6E | - | C | 50 | .328 | .050 | |
| | RG-6/U, RG-6A/U | 6E | 017 | C | 75 | .332 | .029 | C |
| | RG-8/U | 6A | - | C | 50 | .405 | .085 | |
| | RG-9/U | 6B | - | C | 51 | .420 | .085 | |
| | RG-11/U | 6A | - | C | 75 | .405 | .047 | |
| | RG-13/U | 6B | - | C | 74 | .420 | .048 | |
| | RG-22/U | 10 | - | TW | 95 | .409 | .046 | |
| | RG-22A/U & B/U | 10 | - | TW | 95 | .420 | .046 | |
| | RG-55/U, RG-55B/U | 3A | 012 | C | 53 | .206 | .032 | |
| | RG-55A/U | 3 | 012 | C | 50 | .216 | .035 | |
| | RG-58/U | 1 | 011 | C | 50 | .195 | .036 | |
| | RG-59/U | 2 | 013 | C | 75 | .242 | .023 | C |
| | RG-62A/U | 2 | 013 | C | 93 | .242 | .025 | |
| | RG-62B/U | 2 | 013 | C | 93 | .242 | .025 | C |
| | RG-63/U | 6A | - | C | 125 | .405 | .025 | C |
| | RG-71/U | 2 | 015 | C | 93 | .250 | .025 | C |
| | RG-87A/U | 6B | - | C | 50 | .390 | .094 | E |
| | RG-108/U | 9 | 213 | TW | 78 | .235 | .038 | E |
| | RG-111/U | 10 | - | TW | 95 | .420 | .046 | |
| | RG-114/U | 6A | - | C | 185 | .405 | .007 | |
| | RG-122/U | 4 | 010 | C | 50 | .160 | .030 | |
| | RG-141/U | 1 | 011 | C | 50 | .190 | .039 | |
| | RG-142/U | 1 | 012A | C | 50 | .195 | .039 | |
| | RG-149/U | 6A | - | C | 75 | .405 | .049 | |
| | RG-174/U | 5 | 003 | C | 50 | .100 | .019 | |
| | RG-178/U | 5A | 001 | C | 50 | .075 | .012 | |
| | RG-179/U | 5 | 004 | C | 75 | .100 | .012 | |
| | RG-180/U, 180B/U | 22 | 008 | C | 95 | .145 | .012 | |
| | RG-187/U | 5 | 004 | C | 75 | .110 | .012 | |
| | RG-188/U | 5 | 003 | C | 50 | .110 | .021 | |
| | RG-195/U | 4 | 008 | C | 95 | .155 | .012 | |
| | RG-196/U | 5A | 001 | C | 50 | .080 | .012 | |
| | RG-212/U | 6E | - | C | 50 | .332 | .057 | |
| | RG-213/U | 6A | - | C | 50 | .405 | .089 | |
| | RG-214/U | 6B | - | C | 50 | .425 | .089 | |
| | RG-216/U | 6B | - | C | 75 | .425 | .048 | |
| | RG-223/U | 3 | 012 | C | 50 | .216 | .035 | C |
| | RG-225/U | 6B | - | C | 50 | .390 | .094 | E |
| | RG-303/U | 21 | 011 | C | 50 | .170 | .039 | |
| | RG-304/U | 41 | - | C | 50 | .280 | .059 | |
| | RG-365 | 6B | - | C | 50 | .425 | .089 | |
| | RG-400/U | 1 | 012 | C | 50 | .195 | .039 | |
| | RG-402/U | 41 | - | C | 50 | .141 | .036 | |
| | RG-405/U | 86 | - | C | 50 | .086 | .020 | |
| MOHAWK | 5305-8 | 10 | - | TW | 124 | .420 | .040 | |
| | M52001-HT10431 | 9 | - | TW | - | - | - | |
| MONTROSE | 6248 | - | • | C | - | - | - | |
| | CBL6032 | - | • | C | - | - | - | |
| | CBL6881 | - | 004 | C | - | - | - | |
| | CBL7005 | - | 004 | C | - | - | - | |
| | MCX7159 (RG179) | - | 004 | C | - | - | - | |
| MOTOROLA | 30-82921H01 | 21 | - | C | - | - | - | |
| NATIONAL | D210-1 | • | - | TW | - | - | - | |
| | D2241 | • | - | TW | - | - | - | |
| NAVSEA | 6262065-1 | 61 | - | TR | 50 | .437 | .089 | |
| | 6322493 | 62 | - | TW | 75 | .465 | .048 | |
| NCR | 008-0126089 | - | • | C | - | - | - | |
| | 008-0126097 | - | • | C | - | - | - | |
| NEC | 3C-2WS | - | • | C | - | - | - | |
| NIKKIAAI | 3C-2WS | - | • | C | - | - | - | |
| NORFOLK | 710855-30 | • | - | TW | - | - | - | |
| | 710855-35 | • | - | TR | - | - | - | |
| NORTHERN ELECTRIC | RG-187DS TYPE | 31 | 005 | C | 75 | .120 | .011 | J |
| NORTHERN TELECOM | NT-734 | - | 025 | C | - | - | - | |
| NORTHROP | 05A077-1 | 24 | 221 | TW | 77 | .161 | .024 | J |
| | 05A078-1 | • | - | TW | | | | |

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| NUCLEAR GR | RG-59 TYPE | 34 | - | C | 75 | .242 | .025 | |
| PACBELL | PEWC, 75 OHMS | - | 016 | C | - | - | - | |
| PANAVIA | PAN6421 | - | 204 | TW | - | - | - | |
| PHALO | PH-036-001-80152 | 2A | 019 | C | - | - | - | |
| | PH-075-001-05678 | • | - | TW | - | - | - | |
| PIRELLI | RG62 (TEFLON) | 2A | • | C | - | - | - | |
| PROFLEX | 450/11CTMA | • | - | C | - | - | - | |
| RAYCHEM | 810 | 37 | - | C | 75 | .160 | .020 | |
| | 0026A0024 | • | - | TW | - | - | - | |
| | 10584 | 24A | - | TR | 95 | .148 | .012 | |
| | 10586 | 24A | - | TR | 95 | .148 | .012 | |
| | 10595 | • | - | TW | - | - | - | |
| | 10598 | 24A | - | TR | 95 | .145 | .012 | |
| | 10602 | 45 | 204 | TW | 78 | .144 | .025 | |
| | 10605-22-9 | • | - | TW | - | - | - | |
| | 10606 | • | - | TW | - | - | - | |
| | 10612-24-9 | - | 204 | TW | - | - | - | |
| | 10613 | - | 222 | TW | 77 | .154 | .025 | |
| | 10614 | 24 | 221 | TW | 77 | .161 | .025 | J |
| | 2524A0424 | - | 212 | TW | - | - | - | |
| | 2524E0114 | - | 212 | TW | 125 | .179 | .025 | |
| | 2526D1114 | - | 219 | TW | 125 | .154 | .020 | |
| | 5012W5812 | 61 | - | TR | 50 | .437 | .089 | |
| | 5018D3311 | • | - | C | - | - | - | |
| | 5021D1331 | 1 | 011 | C | 50 | .185 | .036 | |
| | 5021H5331 | 25A | - | TR | 50 | .258 | .035 | |
| | 5022E5111 | 57 | 302 | TR | 50 | .164 | .033 | A |
| | 5026A1614 | 44 | - | C | 50 | .080 | .019 | |
| | 5026D5314 | 23 | - | TR | - | - | - | |
| | 5028A2211-9 | 44 | - | C | - | - | - | |
| | 5028D5312 | • | - | TW | - | - | - | |
| | 5030A1114 | 5A | - | C | 50 | .061 | .012 | |
| | 5030A1214 | 5A | - | C | 50 | .061 | .012 | |
| | 5030A1314 | 5A | - | C | 50 | .063 | .012 | |
| | 5030A1318 | 5A | - | C | 50 | .063 | .012 | |
| | 5030A1411 | 5A | - | C | 50 | .066 | .012 | |
| | 5030A1511 | 5A | - | C | 50 | .066 | .012 | |
| | 7028A5518 | 26 | - | TR | 50 | .143 | .015 | |
| | 7518A0811 | 62 | - | TR | 75 | .465 | .048 | |
| | 7522A1311 | - | 023 | C | - | - | - | |
| | 7524D5111 | • | - | TR | - | - | - | |
| | 7526D5318 | 59 | - | TW | 50 | .167 | .020 | |
| | 7528A1114 | • | - | C | - | - | - | |
| | 7528A5314 | 64 | 303 | TR | 75 | .148 | .015 | |
| | 7528G1312-7 | 36 | 007 | C | 75 | .110 | .015 | |
| | 7530A5314 | 29 | | TW | - | - | - | |
| | 7720C8662 | - | 213 | TW | - | - | - | |
| | 7724C8664-9 | 24 | 221 | TW | 77 | .161 | .024 | J |
| | 7724D3664 | 58 | 217 | Q | 77 | .145 | .025 | S |
| | 7820D0331-0 | • | - | TW | - | - | - | |
| | 7826D0130 | 29 | 206 | TW | 78 | .120 | .025 | |
| | 7826D1330 | 4 | - | C | - | - | - | |
| | 9528A1317 | 4 | - | C | 95 | .137 | .015 | |
| | 9528A1417 | 4 | - | C | 95 | .137 | .015 | |
| | 9528A1517 | 4 | - | C | 95 | .137 | .015 | |
| | 9530A5117 | 24A | - | TR | 95 | .149 | .012 | |
| | 9530D5117 | 56 | 301 | TR | 95 | .164 | .012 | A |
| | 9530H1014 | 36 | - | C | - | - | - | |
| | 9530H1118 | 36 | - | C | 95 | .108 | .013 | |
| | 9532A5114 | 23 | - | TR | 95 | .140 | .008 | |
| | 9532A5314 | 23 | - | TR | 95 | .130 | .008 | |
| | EPD20653 | • | - | TW | - | - | - | |
| | EPD22030D | • | - | TW | - | - | - | |
| | EPD22030F | • | - | TW | - | - | - | |
| | EPD22188B | - | 218 | TW | 78 | .150 | .025 | J |
| | EPD6499 | 33 | 220 | Q | 77 | .179 | .025 | J |
| RAYTHEON | 10271188 | 23 | - | TR | 93 | .131 | .009 | |
| ROCKBESTOS | RSS-6-104 | 2 | - | C | 62 | .242 | .032 | |
| ROCKWELL | MP572-0279-0002 | 29 | 204 | TW | 75 | .125 | .025 | A |
| | MP572-0328-0002 | 29 | 204 | TW | 75 | .130 | .025 | A |
| SAXTON | 8315 | • | - | C | - | - | - | |
| | 8443 | • | - | TR | - | - | - | |
| SEQUOIA | 1000NS1V | 36 | - | C | 50 | .120 | .040 | |
| SIECOR | 8712812 | 47 | 201 | TW | - | - | - | |
| SIEMENS | 2YCCY | • | - | TR | - | - | - | |
| SIPPICAN | 213034 | 27 | - | TW | - | - | - | |
| STANDARD | 1100-66F | 45 | 210 | TW | DATA | .145 | .032 | |
| WIRE/CABLE | | | | | | | | |
| STRUCTURED TECH | STC-001 | • | - | C | - | - | - | |
| SUHNER | G03233D | 3 | - | C | 75 | .212 | .017 | |
| | G04233D | 2B | - | C | 75 | .260 | .023 | |
| SUMITOMO | E41105-YAWM1874 | - | • | C | - | - | - | |
| SUPERIOR | FVP219 | 10 | - | TW | 124 | .420 | .040 | |
| | FVP224 | 9 | 214 | TW | 124 | .242 | .021 | |
| | VP-1 | 2 | - | TW | 125 | .460 | .051 | |
| SURPRENANT | 14433B | • | - | C | - | - | - | |
| | 1AS-WTE-1929A | • | - | C | - | - | - | |
| | -JTE-A2606 | | | | | | | |

**Cable Table Notes Page 65 - See Connector/Cable Compatibility Tables Pages 33 & 50**

# CABLE MANUFACTURER'S & CABLE GROUP NUMBER TABLE

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| SURPRENANT | 1S75MU-8 | • | - | C | - | - | - | |
| | 4236 | 37 | - | C | DATA | .160 | .017 | |
| | 8496 | • | - | C | - | - | - | |
| | 8946DS | • | - | C | - | - | - | |
| | 9872 | 4 | 009 | C | 75 | .145 | .017 | |
| | DBB12MBAC | • | - | C | - | - | - | |
| SYLVANIA (GTE) | 19-805709-1 | 5A | - | C | 50 | .085 | .012 | |
| | 73-1317911-1 | 27 | 208 | TW | 125 | .110 | .011 | |
| SYSTEMS | A/B-7/70 | 7 | - | TR | - | - | - | |
| TENSOLITE | 16490/50509YXX-1 | • | - | TR | - | - | - | |
| | 1936-TX-10C2SW | 47 | 201 | TW | 78 | .129 | .024 | |
| | 24453/42810Q-2 | 58 | 217 | Q | 77 | .145 | .025 | S |
| | 24499/898X2 | 24 | 204 | TW | DATA | .125 | .025 | A |
| | 26895/15X-1 | • | - | TR | - | - | - | |
| | 30488/40642X-1 | • | - | TR | - | - | - | |
| | 30895/25L-1 | 60 | - | TR | - | - | - | |
| | 4885584 | - | 022 | C | - | - | - | |
| | 5M2142-001 | • | - | TR | - | - | - | |
| | 8712812 | 47 | 201 | TW | - | - | - | |
| | 92607 | • | - | TW | - | - | - | |
| | E6372429 | • | - | TW | - | - | - | |
| | SM2397-002 | 23 | - | TR | - | - | - | |
| | STME637-2 | - | 206 | TW | - | - | - | |
| THERMATICS | 11040 | 29 | 204 | TW | 75 | .125 | .025 | A |
| | 11079 | 29 | 204 | TW | 75 | .130 | .025 | A |
| | 11421 | - | 223 | TW | 68 | .104 | .019 | |
| | 11421 | - | 223 | TW | - | - | - | |
| | 11505 | • | - | TW | - | - | - | |
| | 12031 | • | - | TW | - | - | - | |
| | 12299 | • | - | TR | - | - | - | |
| | 425-1680-030VW-1 | - | 013 | C | - | - | - | |
| | 5M2022-003 | - | 204 | TW | - | - | - | |
| | 710855-35 | • | - | TR | - | - | - | |
| | 72116620-2 | - | 022 | C | - | - | - | |
| | 7591822 | • | - | TW | - | - | - | |
| | 8712812 (A/FDWG) | 47 | 201 | TW | 78 | .125 | .023 | |
| | E80083 | - | • | C | - | - | - | |
| | M17/117-00001 | 60 | 305 | TR | 95 | .189 | .012 | |
| | NEC725-2 (G) | 53 | - | C | - | - | - | |
| | RG6 | 41 | 020 | C | - | - | - | |
| | RG62 | - | • | C | - | - | - | |
| | TYPECL2P | - | 007 | C | - | - | - | |
| THERMAX | 68-1938TF (2)SXE | - | 223 | TW | 68 | .104 | .019 | |
| TIMES | 2245 | • | • | TR | - | - | - | |
| | 2260 | • | • | C | - | - | - | |
| | 2444BL | 10 | - | TW | - | - | - | |
| | 68999 | - | 003 | C | - | - | - | |
| | 8712812 | 47 | 201 | TW | - | - | - | |
| | AA-2325 | - | • | TR | - | - | - | |
| | AA-2381 | 32 | - | TR | - | - | - | |
| | AA-2511 | 2A | - | C | 75 | .220 | .020 | |
| | AA-2992 | • | - | C | - | - | - | |
| | AA-3096 | 34 | - | C | 50 | .242 | .050 | |
| | AA-4479 | • | - | C | - | - | - | |
| | AA-4668 | • | • | C | - | - | - | |
| | AA-4888 | • | - | TR | - | - | - | |
| | BL782 | 9 | 213 | TW | 78 | .245 | .039 | |
| | BL784 | 10 | - | TW | 78 | .420 | .067 | |
| | BL982 | 9 | 215 | TW | 98 | .245 | .032 | |
| | BL984 | 10 | - | TW | 98 | .420 | .053 | |
| | BL1242 | 9 | 216 | TW | 124 | .245 | .022 | |
| | BL1244 | 10 | - | TW | 124 | .420 | .038 | |
| | M1-2040 | • | • | C | - | - | - | |
| | RD-178 | • | - | C | - | - | - | |
| | RG-108 | • | - | TW | - | - | - | |
| | RG-180 | • | - | TR | - | - | - | |
| | SF-142B | 1 | - | C | 50 | .185 | .036 | A |
| | SF-214 | 6B | - | C | 50 | .425 | .089 | |
| | SF-214 | 6B | - | C | - | - | - | |
| | SF-304 | • | - | C | - | - | - | |
| | SF-5394 | • | - | TR | - | - | - | |
| | TRF-8 | 4A | - | TR | 50 | .500 | .086 | |
| | TRF-11 | 4A | - | TR | 75 | .500 | .049 | |
| | TRF-58 | 7 | - | TR | 50 | .245 | .038 | |
| | TRF-59 | 3 | - | TR | 75 | .325 | .023 | |
| | TRF-62 | • | - | TR | - | - | - | |
| TROMPETER | QRC-78-1 | 39 | - | Q | 78 | TBD | .022 | |
| | QRC-78-2 | 17 | - | Q | 78 | .286 | .040 | |
| | QRC-78-3 | 38 | - | Q | 78 | .325 | .039 | |
| | QRC-124-1 | 40 | - | Q | 124 | TBD | .012 | |
| | QRC-124-3 | 38 | - | Q | 124 | .335 | .022 | |
| | TCC-50-2, RG58 TYPE | 1 | 011 | C | 50 | .195 | .038 | F |
| | TCC-75-2, RG59 TYPE | 2 | 013 | C | 75 | .242 | .031 | G |
| | TRC-50-1 | 32 | - | TR | 50 | .156 | .015 | |
| | TRC-50-2 | 7 | 306 | TR | 50 | .245 | .037 | |
| | TRC-50-4A | 14A | - | TR | 50 | .495 | .081 | |
| | TRC-75-1 | 33 | 307 | TR | 75 | .189 | .012 | |
| | TRC-75-2 | 7 | - | TR | 75 | .245 | .019 | |

| Manufacturer | Designation | Cable Group Wrench | Cable Group Tool | Type | Ohms | Jacket O.D. | Cond. Dia. | Notes |
|---|---|---|---|---|---|---|---|---|
| TROMPETER | TWAC-78-1F2 | 49 | 205 | TW | 78 | .095 | .015 | P |
| | TWC-78-1 | 29 | 202 | TW | 78 | .150 | .022 | H |
| | TWC-78-2 | 9 | 213 | TW | 78 | .242 | .037 | H |
| | TWC-124-1 | • | - | TW | - | - | - | |
| | TWC-124-1A | 29 | 203 | TW | 124 | .150 | .012 | H |
| | TWC-124-2 | 9 | 214 | TW | 124 | .246 | .022 | H |
| UK | BICCT(M)3205 | - | 016 | C | - | - | - | |
| | BICCT(M)3304 | - | 015 | C | - | - | - | |
| UNICABLE | E-70425 | • | - | C | - | - | - | |
| | ICN417-2052P | 4 | - | C | - | - | - | |
| USAF | 8712812 | 47 | 201 | TW | - | | | |
| VDO | 711-PAN6421 | 45 | - | TW | - | - | - | |
| VIDAR | RG-187DS TYPE | 31 | 007 | C | 75 | .125 | .012 | J |
| VOUGHT AERONAUTICS | 202-2964-222 | 57 | - | TR | - | - | - | |
| WANG | E-70431 | 022 | - | C | - | - | - | |
| WECO | 16PEVL | 12 | - | TW | - | - | - | |
| | 724 | 6 | 016 | C | - | - | - | |
| | 728B | 6 | 016 | C | - | - | - | |
| | 730A | 2B | 015 | C | - | - | - | |
| | 731 | 2 | - | C | - | - | - | |
| | 754E | 10 | - | C | - | - | - | |
| | 760A | 11 | - | TW | - | - | - | |
| | 761A | 30 | - | TW | - | - | - | |
| WEST PENN | 25813 | - | 012 | C | - | - | - | |
| | 2806 | 34 | - | C | - | - | - | |
| | 814 | - | 013 | C | - | - | - | |
| | 843 | - | 014 | C | - | - | - | |
| | CL22815 | - | 023 | C | - | - | - | |
| | CL2806 | - | 024 | C | - | - | - | |
| | CL2815 | - | 023 | C | - | - | - | |
| | CL2843 | - | 025 | C | - | - | - | |
| | E39829 | - | 022 | C | - | - | - | |
| | P-806 | - | 016 | C | - | - | - | |
| | RG-G2 | 2 | 013 | C | - | - | - | |
| WESTERN COMPONENTS | E79733 | 11 | - | TW | - | - | - | |
| WESTINGHOUSE | 128C147H01 | 26 | - | TR | 75 | .165 | .012 | |
| WOODSON ELEC | 12-6530 | 5A | - | C | - | - | - | |
| WOVEN ELEC | T19TPSJ2619EN | 27 | 208 | TW | DATA | .105 | .012 | |

**Notes for Cable Table:**

- • Available - Special Order. Call Factory
- A Jacket Slits Required
- B Flooded Burial Type
- C Solid Center Conductor
- D 75 ohm N Connector Available - Special Order
- E Without Jacket
- F Green Jacket
- G Violet Jacket
- H Blue Jacket
- J Double Shield
- K Semi-rigid
- L Ethernet
- M Replaces Trompeter TWAC-78-1F1
- N See IBM 4885584
- O All Values Nominal
- P Plenum Cable
- R See Belden Cable No. 89269
- S Quadrex for Twinax Applications
- T CONFORMABLE
- U MIL-C-17D/Strand 7X32
- X Under Evaluation - Call Factory

**Cable Table Notes Page 65 - See Connector/Cable Compatibility Tables Pages 33 & 50**

# GENERAL SPECIFICATIONS

## Performance, Material, Plating Specifications

### GENERAL PRODUCT PERFORMANCE SPECIFICATIONS:

| | Connectors | | | | | Patching | | |
|---|---|---|---|---|---|---|---|---|
| | BNC | TNC | 70 Series | 150 Series | 450 Series | WE Std. | WE Min. | RCA Std. |
| Frequency Range | 0-4GHz | 0-11GHz | 0-500MHz | 0-500MHz | 0-2MHz | 0-1GHz | 0-1GHz | N/A |
| VSWR | 1.30 Max. | 1.30 Max | Not Rated | Not Rated | Not Rated | 1.04 @ 75MHz<br>1.12 @ 100MHz<br>1.10 @ 500MHz | 1.06 Max. | 1.05 @ 50MHz<br>1.09 @ 100MHz<br>1.33 @ 500MHz |
| Voltage Rating | 500 VRMS at Sea Level | 500 VRMS at Sea Level | 400 VRMS at Sea Level | 250 VRMS at Sea Level | 150 VRMS at Sea Level | 500 VRMS at Sea Level | 250 VRMS at Sea Level | 500 VRMS at Sea Level |
| | 125 VRMS at 70,000 ft. | 125 VRMS at 70,000 ft. | 100 VRMS at 70,000 ft. | 62.5 VRMS at 70,000 ft. | Not Rated | | | |
| Temperature Range °C | -65° to 165° | -65° to 165° | -65° to 165° | -65° to 165° | -65° to 165° | -65° to 165° | -65° to 165° | -65° to 165° |

### MATERIALS AND SPECIFICATIONS, FINISH SPECIFICATIONS: TFS-1

| Material | Alloy or Type | FED/MIL Spec. | Usage |
|---|---|---|---|
| ABS | Moldings Type 2 | MIL-STD-1803 L-P-1883B* | Looping plug handles |
| Acetal | Dupont Delrin | L-P-392 | Insulator, cases |
| Aluminum | 2024-T 351 | QQ-A255/6 | Backbars, cases |
| | 6061-T6 | QQ-A200/8 | Stiffener bars |
| | 6061-T6 | QQ-A250/11 | Patch panels |
| | 6061-T6511 | QQ-A200/8 | Backbars, cases |
| Beryllium Copper | 172 | ATSM-B194 | Contact & Crescent springs |
| | 173 | ASTM-B196 & 197 | Contact sockets, fingersprings |
| Brass | 260 | QQ-B-613 | Ground lugs |
| | 360 | QQ-B-626 | Connectors bodies, coupling sleeves, clamp nuts, hex mtg. nuts, ctr. contact pins, cases. |
| Fluorinated Ethylene Propylene | (FEP) | L-P-410A | Insulators |
| Nylon | 6/6 | L-P-410A | Insulating bushings |
| Perfluoroalkoxy | (PFA) | ASTM-D3307 | Cable jackets |
| Phenolic | XXX | L-P-523 PBE | Patch panels, backbars |
| Phosphor Bronze | 644 | QQ-B-7 | Contact springs, lockwashers |
| Polytetrafluoro-ethylene | (PTFE) | ASTM-D1457-83 | Dielectrics, insulators |
| Solder | Sn60, 62, or 63 | QQ-S-571 | |
| Steel | C1010-1018 | QQ-S-636 | MPN cases |
| | Music Wire | QQ-W-470 | Tension springs |
| Corrosion Resistant Steel | 303 | QQ-S-763 | Connector bodies, coupling sleeves, hex mtg. nuts |
| | 302<br>301 | QQ-S-766<br>ASTM 484, AS82 | Designation strips |
| Thermo-plastic Polyester | Glass Filled | MIL-M-24519 | Heat resistant molded insulators |
| Vinyl | Clear Rigid Self ext. | L-P-535 | Designation strip window |
| | Opaque Rigid Self ext. | L-P-535 | Designation strip mating strip |
| Zinc | Eastern Alloy #7 | QQ-Z-363 | Selected non-functional parts |

**TFS-1A: .000100-.000300 max. thk. Bright Nickel**
per QQ-N-290, Class 1, Form SB
(over) **.000080-.000150 thk Bright Copper**
per MIL-C-14550, Class 5
(over) **.000500 max Electroless Nickel**
per MIL-C-26074A, Class 1 (on aluminum only)

**TFS-1B: .000020-.000030 thk Bright Gold[3]**
per MIL-G-45204, Type 11, Grade C, Class 1
(over) **.000050-.000180 thk Bright Nickel[2]**
per QQ-N-290, Class 2[2]
(over) **.000080-.000150 thk Bright Copper[3]**
per MIL-C-14550[2]

**TFS-1D: .000100-.000120 thk Electroless Nickel**
per MIL-C-20674A, Class 1
(over) **.000080-.000150 thk Bright Copper**
per MIL-C-14550, Class 5

**TFS-E: .000200-.000300 thk Bright Electro Tin**
per MIL-T-10727, Type 1 and solder test per Para. 4.6.3.1

**TFS-1H: .000200-.000300 thk Cadmium plate**
per QQ-P-416, Type II, Class 3

**TFS-1M[4]: .000200-.000300 thk Silver**
per QQ-S-385, Type II (Semi-bright) or III (Bright), Grade A (Chromate post treatment)
(over) **.000080-.000150 thk Bright Copper**
per MIL-C-14550[4]

**TSF-1N[5]: .000300-.000500 thk Cadmium plate**
per QQ-P-416, Class 2, Type II, Olive Drab
(over) **.000500-.000550 thk Electroless Nickel plate**
per MIL-C-28074, Class 1, Grade B

**TFS-1T[5]: .000050-.00010 Bright Tin**
per MIL-T-10727, Type I
(over) **.000150-.000200 Sulfamate Nickel**
per MIL-P-27418
(over) **.00010-.00015 Copper**
per MIL-C-14550, Class 4

**TFS-1U[5]: .0002-.0003 thk Sulfamate Nickel**
per MIL-P-27418
(over) **.000080-.000150 thk Copper**
per MIL-C-14550, Class 4

**TFS-1V[3]: .000200-.000300 thk Silver**
per QQ-S-385, Type I (Matte), Grade A
(over) **.000080-.000150 thk Bright Copper**
per MIL-C-14550[6]

2. All connector center contacts **.000050 - .000070 thk Bright Gold**, Class 1, Grade C, Type II
3. Thickness in accordance with **MIL-G-452048, Para 6.3** "Strikes and Underplating"
4. Per **MIL-C-39012C, Amendment 1, Para. 1.2.3.**
5. Meets **MIL-STD-1344 "500-hour Salt Spray"** requirements

# Electronic Systems Wiring and Cable

After buying the most expensive "end" equipment, many systems engineers have difficulty in determining the best methods of cabling and interconnecting for the routing of signals with minimal loss, degradation and noise pickup. Simple solutions such as selecting the correct cable, eliminating common mode grounds or physically separating long runs of parallel cables will help make the difference between a good or bad system. It must be emphasized that these good practices must be implemented at the time of initial design and are almost impossible to implement after the system is built. This "interface" engineering will be discussed in following sections titled "Signal Degradation" and "Noise."

The systems engineer should study his system parameters and noise environment before selecting his cabling and connector components. Consideration must be given to:

- Signal frequencies (audio, video, IF or RF)
- Voltage and power levels
- Tolerable losses and degradation
- Reflected signals due to discontinuities
- Noise from direct contact common mode and ground loop returns, or radiated stray magnetic and capacitive fields.

Circuit wiring and cabling are susceptible to the pickup of noise. All low voltage signal and data wiring should be shielded irrespective of the frequency to be transmitted. Coax cable (primarily designed to carry RF) is excellent for digital data transmission. It is relatively inexpensive (RG-58, RG-122, etc.) and many complete series of coax connectors are readily available. High speed and broadband digital data must use RF coax transmission cable since the fast rise time narrow pulse has harmonics reaching into the RF region. For higher frequencies, coax cable must be used for point to point wiring since it has the transmission characteristics, flexibility and economy necessary for most systems.

## Impedance Standards of Coax Cables

The most efficient impedance to use when transmitting a signal (considering only the voltages, currents and powers to be transmitted) is 75 ohm. The ***telephone industry***, followed by the ***TV industry***, uses 75 ohm almost exclusively for the transmission of ***video, baseband*** and ***IF frequencies.*** The ***military services*** were faced with a differing need for low radiation angle ***omnidirectional antennas*** during the period 1920 through 1940 for broadcasting ship to ship, airport tower to low flying aircraft, and base station to ground troops. The only antenna that would fill that need was the ***vertical ground plane antenna*** (in its many forms) with transmissions at 50 ohm. The military standardized on 50-ohm impedance and spent vast sums of money developing cables and connectors for all of their coax systems. The Armed Services Electro Standard Agency (ASESA—at one time a military agency) designed all military coax components and assigned the connector UG and cable RG designations. The agency has since been replaced with the latest government/industry committees and the current general connector standard MIL-C-39012 (primarily for 50 ohm usage). The 93-ohm cable was developed to address the need for a ***low-capacitance instrumentation*** coax cable. By removing some of the coax dielectric and substituting air in the RG-59 cable, the distributed capacitance was lowered, thereby creating a lower voltage loss transmission medium (RG-62 cable).

More sophisticated cables and connectors of twinax, triax and quadrax are now available. These newer components improve external noise rejection and containment of classified signals.

# Signal Degradation

Signal degradation in any transmission medium usually consists of voltage amplitude reductions, wave shape changes, phase or delay changes, or power losses where power is transmitted. In most systems the interconnecting cable is the longest transmission path and its selection, manufacture, testing and installation should be carefully considered. **Cable should not be randomly selected and installed.** When selecting cable from specifications, always consider the length of the cable run, heat exposure, frequency and power to be transmitted vs. the acceptable losses inherent in the cable, the external noise fields and frequencies to be anticipated or encountered. Also consider the availability of connectors to terminate the cable. Too small a cable will always be cause for excessive losses. Fast rise time digital pulses will have the leading edge distorted due to the high resistance "skin" effect of small coax cables. When selecting a cable for a long run, observe the insertion loss to assure that your signal gets to its destination without too much loss. **When in doubt select a larger cable!** Incomplete copper coverage in the outer braid over the dielectric will cause transmission line losses and affect the cable's susceptibility to signal leakage or noise pickup. A copper braid coverage of 80% should be the minimum with 90% being preferred. Skimping on the quality of the copper braid will affect the cable's loop resistance and its "line" and "transfer" impedance. As a good rule of thumb, if the dielectric is visible through the braid (without bending the cable) then the cable should not be used.

**Unseen manufacturing faults** produce signal path impedance changes or discontinuities which **can only be detected by "frequency sweeping"** the cable. TV broadcasters have encountered as high as 60 dB losses in short runs due to periodicity and other manufacturing faults that are only detectable by swept frequency testing techniques. RG-59, RG-62, and other coax cables use copperweld wire for the center conductor. Copperweld is a high resistance steel wire with a copper cladding on the outside and was originally intended to give strength to TV cables when suspended from poles or pulled through ducts. This steel wire will increase the cable attenuation on a long run (particularly at the lower frequencies) due to the high resistance of the copper cladded steel. RG-59 and RG-62 have approximately 44 ohms per 1000 loop feet as compared to 17 ohms when using pure copper for the same size center conductor. It is also difficult to effectively crimp a center contact pin on the hard steel copperweld wire. Many cable defects are not readily visible and may not show up without proper testing. **The reputation of the manufacturer** and the **type, quantity and quality of material** used is more important than cost savings when selecting coax cable. Be careful that cable does not support heavy equipment or is subject to prolonged exposure to heat in system installations. To avoid cross talk do not tightly "bundle" cables. Do not bend cable beyond the manufacturer's recommended "radius of bend" in order to avoid producing cable discontinuities. Try to space separate high signal level or power circuits from low signal level cables when routing cables.

Signal cables are usually manufactured using polyethylene which is adequate for normal use. Teflon™ dielectric and sheathed cables should be used where high heat or chemical action will attack poly cables (such as in aircraft or industrial plants). The National Fire Underwriters now requires non-fire supporting cable to be used for all open wiring in public buildings ***(plenum wiring)***. Fire insurance rates can be greatly reduced in computer, nuclear accelerator and other large installations if TFE or FEP cables are used.

All transmission cable manufacturers should provide the electronic characteristics of their cables (including power handling and attenuation per foot versus frequency) to aid the system design engineer in doing a proper job. For instance, RG-58C has the following characteristics if built to military specifications:

**Attenuation in dB per 100 foot length**

(Ambient temperature 100° F in freespace at sea level)

| Frequency MHz | 1 | 10 | 50 | 100 | 200 | 400 | 1000 | 3000 | 5000 | 10000 |
|---|---|---|---|---|---|---|---|---|---|---|
| Attenuancy 100° | 44 | 1.4 | 3.3 | 4.8 | 7.4 | 12 | 24 | 54 | 83 | 10 |
| Power (Watts) | 3000 | 1000 | 450 | 300 | 200 | 135 | 90 | 40 | 20 | |

Note how quickly the cable becomes unusable at the higher frequencies. Lowering the dielectric constant of the dielectric with Teflon™ or foamed Teflon™ and silver plating the inner and outer conductors to increase the skin effect conductivity will greatly improve the high frequency usage. The **increase in performance justifies** the **additional cost.** Keep in mind that for a 10 dB loss, only 3/10ths of the transmitted voltage will show up at the receiving end, and only 1/10th of the generated power will be available (assuming a reasonably good impedance match). If the operating temperature is higher than the rated temperature or if the cable is used at high altitudes, the attenuation and power handling capacity should be derated.

Low-priced cable should be carefully considered. Any reduction in the amount of copper in the conductors or in the quality of materials used throughout will affect performance. Many manufacturers provide better performance in their smaller cables by using materials better than minimum Mil Specs require. Cable performance will also degrade with time and can be adversely affected by the environment where it is installed (sun, ozone, salt, sulphur products, etc.).

A cable's shielding effectiveness versus the signal frequency to be transmitted should also be considered where noise pickup can be a problem. It is usually financially and physically impossible to undo any damage or replace cables once they are installed and terminated.

All RG-59 cables are not the same. **By adding the word "Type" a manufacturer may bypass minimum spec requirements** to reduce pricing. Some manufacturers build a **"better than Mil Spec"** cable and supply a superior product. They also **must use the word "Type"** since they **exceed** or **deviate** enough from the electrical and mechanical specifications. This also applies to connectors. Be cautious of "low bid" surplus dealers, distributors, or packaging houses. Inventoried cable may deteriorate with time. The design engineer and installation technician must be aware of the many hidden and unknown cable properties that may be detrimental to the system's performance. **Buyers accepting low bids may burden engineers and technicians with future problems due to hidden deficiencies.**

## Coax Cable Connectors

Any connector must be able to interconnect with very low d.c. series resistance (less than 10 millohms). The impedance of a connector is usually of no consequence below approximately 300 MHz since the connector does not contribute to circuit performance until its length approaches 1/20th of a wavelength. 50 ohm connectors can be attached to 75 ohm **video cables** with little detrimental effect. **However, the effect of a connector on a signal is cumulative.** Coax connectors should be impedance matched to the system impedance for frequencies above 300 MHz.

Very low level signals (-100 to -130 dBm) are encountered in certain applications (such as ***satellite communications***). The generation of ***intermodulation products*** and non-linear distortion caused by the presence of ferro-magnetic material in the conductor has become a more prominent factor in the selection of cables and connectors. Ferro-magnetic materials, such as iron, stainless steel, cobalt and nickel, are commonly encountered in RF conductors. They are encountered in the form of copper clad steel cables and wires, and in environmental protective platings containing nickel. Even minute amounts of these materials can generate noise levels capable of masking or obliterating low-level signals.

Connector base materials should be plated with bright copper for surface finish and conductivity, followed by a low-porosity, pulse-plated gold finish plating for environmental protection and minimum contact resistance. The use of a nickel understrike is to be avoided and is not necessary when the gold is deposited by proper pulse-plating techniques. SMA (and smaller connectors) using stainless steel as the base material, and coax cable using any copper clad wire in either the inner or outer conductors should not be used for this application. **Heat treated beryllium-copper should be used for critical contact springs** to maintain contact resilience. Many manufacturers use ordinary brass which soon loses its contact pressure and the connector becomes noisy or fails.

Unfortunately, military specifications governing the manufacture of connectors and related equipment do not recognize the pitfalls mentioned above. Lax specifications and "low-bidder" procurement policies will frequently place inferior components in critical applications. The military **"Qualified Product List" (QPL) is only a tabulation of products and manufacturers certified to meet the minimum specification standards.** Manufacturers are relied upon to police their own products. Under "low bid" pressure, QPL listed products below the quality necessary to do an adequate job may slip by. There have been instances of junk or counterfeit parts being supplied to the government under the guise of "low bid."

There is no provision that will insure the quality of products. The systems engineer can no longer afford to take cables and connectors for granted. He must be aware of cable characteristics such as attenuation, phase displacement, and transfer impedance. The systems engineer must also understand the inherent characteristics of the many connector families available and the strengths and weaknesses of individual manufacturers' connector designs. He must be willing to expend the time and effort to specify the quality component his system demands.

The many types and series of coax connectors presently available can cause confusion for users. Many of the lesser known series were designed to address specific problems or were developed by commercial companies for their own proprietary product line. The connector series listed below have gained universal acceptance due to their simplicity and performance. They are produced and stocked by the majority of coax connector manufacturers.

| Nominal Cable Size O.D. | Connector Size | Quick Disconnect | Threaded |
|---|---|---|---|
| .060 to .425 | Standard | C | N |
| .060 to .425 | Miniature | BNC | TNC |
| .060 to .225 | Subminiature | TPS | TCM |

Much can be written to discuss the advantages of one series of connectors over another. Selection is normally based on cost or performance depending upon the system parameters required.

## Connector Attachment: Crimping or Soldering

Crimping is normally used where the speed of attachment is important or where it is virtually impossible to solder due to lack of power (as on the top of a telephone pole or in a cable vault). A special crimp tool quickly and simply installs the connector to the cable. Repair requires a new connector for replacement. Soldering, on the other hand, does not require

any special tool. A soldered connection will not corrode provided adequate heat is correctly applied to avoid a "cold solder joint." Some soldered coax connectors may be used over without special tools or replacement parts. This is advantageous on shipboard or in field locations where replacement parts or tools are not always available.

## Noise

Electrical noise is by definition, any unwanted interfering voltage, developed within or externally in a system, which reduces the performance of that system. "Noise" has always been a problem and in the past was usually reduced by brute-force filtering which reduced or stopped "noise" after it had entered the system. This method was quite expensive, but reasonably effective since signal information voltages were low in frequency and systems were few and not too large or complex.

Present day ***communication*** and ***data systems*** are continually becoming larger, more numerous and use higher information rates and frequencies in an atmosphere of expanded electrical and electronic equipment usage. The net result is ever increasing levels of interference and noise which creates an electronic traffic jam of major proportions. This applies equally to ***low level analog*** and ***digital pulse systems.*** Filtering is practically useless (or in some cases, completely unusable) since it produces excessive deterioration of the desired pulse waveforms or inaccuracies and distortion of analog signal voltages. Noise reduction is best accomplished by simply stopping "noise" before it enters the system.

The following describes how external noise is introduced into systems by the equipment interconnecting wiring, and the improvements that can be realized by installing noise-rejecting type cables and applying good equipment isolation and grounding techniques.

Most electronic equipment do not produce random noise and usually perform the singular task they were designed to do.

Unwanted noise is picked up by the interconnecting wiring through the direct contact action of **ground loops** and **common mode returns**, or by **inductive** and **capacitive pickup** of nearby radiated fields. A desired signal in one circuit can be noise to another. Interference can be produced by local circuits within the system or from equipment completely removed and external to the system. Conversely, cables can radiate the signal they are carrying into adjacent circuits **(cross talk)** generating interference to other data systems or causing security compromises in classified military communications. This problem can be further compounded by **poor cable-to-equipment impedance matching** which produces signal reflections and high standing wave ratios. Poorly selected and installed cabling can act as both transmitting and receiving antenna or as undesired primary and secondary windings of coupling transformers, placing interference into the system.

Systems are often designed, fabricated, and installed using the simplest multiwire cable or grounded coax between equipment, racks, and buildings, not realizing that they will probably encounter and pick up all manner of interference. Nearby electrical equipment such as high power radar, broadcast stations, power distribution mains, fluorescent lighting, arcing motors, teletype and communications circuits are but a few of the noise makers. The lower the system signal voltage level, the greater is the susceptibility to this outside interference.

A system design might work fine on paper or when initially assembled and tested. But it may not perform as anticipated when installed at its final location on ship or shore. You may realize that the completed system has picked up much noise and hum, or is itself radiating interference so heavily that the equipment is unusable. Costly additional effort, parts, and time expended to locate and attempt to eliminate the causes of the noise pickup may meet with little success. **Cable-to-equipment interface engineering should be applied at the start of system planning and design** to avoid this unnecessary waste. This applies to all systems for low or high frequency signals, for applications in ***TV, telemetry, timing, ordnance, environment testing, computer, telephone, test instrumentation,*** or ***normal communications.*** Each system must be considered individually, since the signal frequencies and amplitudes within the system and the anticipated external interference will dictate what type of cabling and connection techniques are to be used.

Following are typical examples of good cable engineering.

***Low-level environmental systems*** predominantly use "guarded" balanced and shielded lines to transmit the calibrated transducer test voltage to an isolated charge amplifier.

***TV video*** is distributed over 124-ohm "shielded twisted pair" or twinax (instead of coax) in high noise areas to obtain low frequency magnetic field cross talk and hum cancellation.

***Digital applications*** in the ***computer*** and ***instrumentation*** fields require good high-frequency design engineering when transmitting nano-second rise time pulses. A 10-nano-second rise time pulse is equivalent to 100 megahertz RF. Good coax cable techniques helps to avoid pulse reflection, false noise triggering or data inaccuracy.

Special care is required to keep noise from entering ***information systems*** (particularly ***aircraft***). ***Low level communication circuits*** and cabling should be space separated and have effective shielding from

adjacent parallel power circuits to avoid induced hum.

***Unprotected circuits*** (such as ***ordnance*** and ***timing***) can receive false pulsing if exposed to external radiated RF interfering fields.

***High megawatt pulsed radar*** will introduce both its carrier and PRF into nearby sensitive low-level unprotected cable runs which act as receiving antennas.

Sometimes the transmitted pulses have amplitudes of hundreds of thousands of volts (as used in ***atomic energy testing*** or ***linear accelerators***) thereby producing large magnetic and capacitive interference fields. These play havoc with local cable connected instrumentation and electronic equipment.

In the case of ***nuclear attack***, a tremendous electrical field transmitted for many miles from ground zero will induce extremely high voltages in all unguarded and unprotected cable and equipment. It is estimated that a vertical electrical field intensity of 50K volts per meter will be present 62.5 miles from a 10-megaton near-ground explosion. Larger bombs exploded at higher altitudes will cause correspondingly greater damage, including the disruption of the national power grid. This may burnout many sensitive components. Solid-state transistors and diodes, integrated circuits, front end RF coils, sensitive relays and reeds are typical of the sophisticated elements used today for both military and commercial systems that may fail even though far removed from the fireball area.

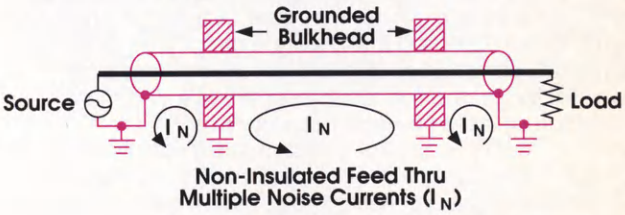
**The lack of money, time and qualified personnel will not permit complicated and costly post-completion interference cleanup of poorly engineered systems.** The use of good coax, twinax, triax, or double shielded balanced line (quadrax) in isolated or guarded circuitry, will do much to suppress outgoing EMI and RFI, reduce incoming noise pickup, and help protect both your system and the adjacent system from mutual interference. Careful cable to equipment interface planning must be exercised to produce workable compatible systems. Design engineers are not free to treat cable installation as casually as they may have in the past.

# Coax Cable

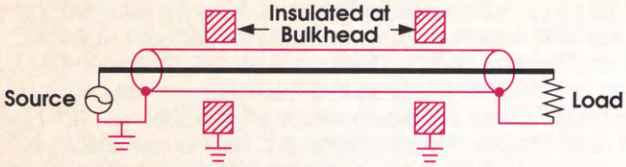
Shielded cable should be used to protect against magnetic and capacitive stray fields in all cases of potential interference (low or high frequency). Grounded coax cable is excellent for use from 20 KHz to 5 GHz for most systems. But even coax, if subjected to very strong interference, will not completely protect the desired signal. Coax cable is a two conductor cable. The outer conductor of a coax cable is not a true shield in that it is also the signal return. A true shield is insulated from the signal carrying conductors and protects the enclosed coaxial conductors. However, the outer conducter of a coax cable is an electrostatic shield and thus protects against capacitive interference. When two conductors at different voltages are placed near one another, a charge difference exists between them. Since a charge difference exists between the two conductors, a capacitive effect also exists between them. Such capacitive effects can give rise to interference signals in both conductors. To prevent wires which carry low-level signals from being influenced by capacitive effects, you need to surround the low-level signal wire with an electrostatic shield. This type of shielding is effective because external electric fields cannot penetrate an enclosure surrounded by an electrical conductor. Coax cable should be used when low-level signal wire is likely to come in contact with another signal carrying wire. This is especially true when the voltage difference between the signal carrying wire and the source of interference is large. Any external voltage injected in this braid will act as noise to the desired signal in the coax. The sophistication of cable and equipment isolation techniques used is dependent upon the frequency of the interfering noise and how it enters the cable system. Any additional measures taken to reduce incoming noise will also reduce outgoing radiation and cross talk.

## Ground Loops and Common Mode Returns

Coax cable consists of an inner and an outer conductor insulated from each other. Each conductor carries a desired signal current (source to load or return). The outer conductor is usually grounded at the source, load, bulkheads and other intermediate points. **"Ground loop"** or **"common mode"** currents caused by potential differences of external noise sources are also simultaneously carried on the outer conductors and noise is introduced into the system, greatly reducing the "signal-to-noise ratio."



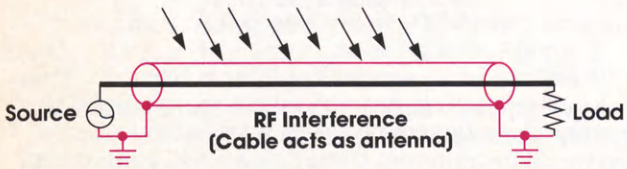

Low frequency signals (20 KHz to 6 MHz) are particularly susceptible to both ground loop and common mode interference. Coax cable is recommended in this case with the complete coax chain having a **minimum number of outer conductor ground contacts.** Reducing the number of ground connections reduces the number of possible ground loops. Major equipment, relays, switches, connectors, patch panels, etc., should be **isolated from ground** with the ultimate design having only one system ground connection at the source.



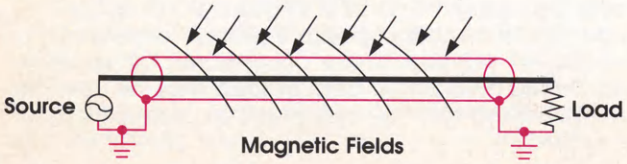

Insulated Feed Thru
No Noise Currents ($I_N$) in Signal Return

## Radiated Fields

Where strong radiated noise fields exist (such as **high-powered radar, broadcast stations, power lines, fluorescent lighting, office** and **industrial machinery,** multiple cable runs, etc.) the cable conductors act as receiving antennas or secondary windings of transformers and pick up externally generated noise. At higher frequencies, a part of the energy associated with the fluctuating current of charge in a conductor is radiated away from the conductor in the form of electromagnetic radiation. Electromagnetic shields make use of the fact that the electromagnetic radiation must simultaneously contain electric and magnetic fields in order to propagate independently through space. Therefore, a shield designed to eliminate electrostatic fields can be used to neutralize the electric field component of electromagnetic wave. Consequently, the outer conductor of a coax cable connected to a ground through a low-impedance path will be an effective shield against electromagnetic interference. In high level RF environments, it is desirable to minimize the RF potentials existing between points on a coax shield. The shield should be grounded at both ends of the cable and at intermediate points along the cable. This multi-point grounding on the shield maintains the RF shielding effectiveness of the cable. If coax cable is used in a radiated interference area, the outer conductor should be grounded as often as possible and wherever feasible in order to remove the radiated interference as soon as possible. If your application requires that you address both ground loops and radiated interference you may need to use either twinax or triax cable.

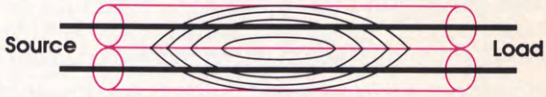



RF Interference
(Cable acts as antenna)




Magnetic Fields

A particularly bad source of noise pickup is the induced currents encountered in large multiple cable installations ("cross talk").

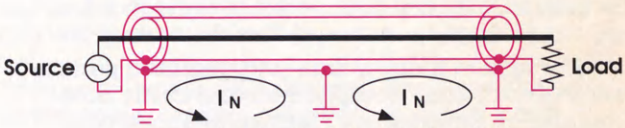



Cross Talk

Two improved types of cables are used for additional protection against these radiated sources:

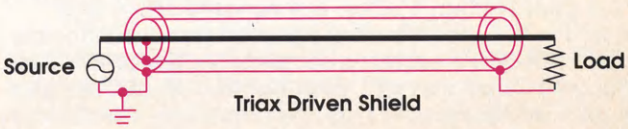
# Triax Cable

Triax cable is coax cable with an additional outer copper braid (insulated from the signal carrying conductors) that acts as a true shield and protects the enclosed coax conductors. This braid or shield is grounded and passes both ground loop and capacitive field noise currents away from the signal carrying coax, thereby greatly improving the "signal to noise" ratio over standard coax cable.




Triax Cables Provide Additional
Shield, Insulated from Signal Carrying Coax

Triax cable is also used in **"Driven Shield" applications** where the inner conductor and first braid are driven in parallel at the transmitting end and work against the outer braid which is insulated above ground. **The inner braid is left floating at the receiving end, providing a "Faraday" shield between the inner and outer braid.** In this way the cable's distributed capacitance is greatly reduced, thereby reducing cable losses and loading. This application is most effective in ***high frequency transducer data systems*** where the distributed capacity in coax cable limits the data accuracy. (Page 129, Reference 1.) Triax cable with only the two outer braids can be used as a low impedance transmission line (approximately 12 ohms) to carry high-current pulses to ***low impedance laser lamps*** or ***exploding bridge wire*** (EBW) ***ordnance systems.*** Triax cable and connectors completely insulated from the ground are available for these applications.

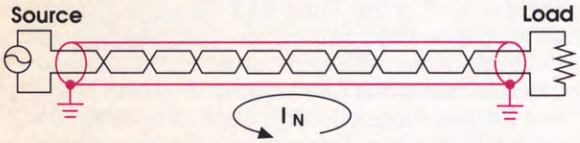



Triax Driven Shield

# Twinax Cable

Twinax cable is a two-conductor twisted balanced wire line with a specific impedance and a shielding braid around both wires. The twisting of the two balanced-signal-carrying wires cancels any random induced noise voltage pickup, giving protection against any low frequency magnetic noise passing through the copper braid.

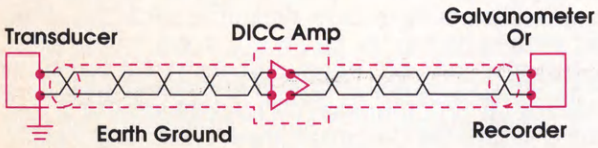
**Trompeter's twinax cable design** also lowers cable losses by adding two (2) dielectric fillers under the braid which separates the braid away from the signal pair, thereby lowering the leakage capacitance to ground. Additionally, the coverage is improved to 90% by using more copper wire in the braid and weaving it tighter. Like triax cable, Trompeter's twinax cable provides protection against ground loops and capacitive fields. Twinax cable usefulness, however, is limited to approximately 15 MHz since it has rather high transmission losses above this frequency. The 124 ohm twinax cable is used extensively by the Bell Telephone System for ***video transmission***. Twinax cable and concentric connectors are available for ***low frequency, digital*** and ***video distribution systems***.




Twinax Cable Provides A Sheild, Insulated from The Twisted Pair Signal Carrying Conductors

## Twinax Guarded Cable Hookup

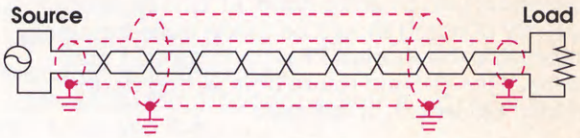
In ***instrumentation systems***, where ***thermocouple*** and other transducer information must be remotely recorded, additional **common mode rejection** of noise can be obtained by using twinax with only one ground contact located at the transducer. Insulated concentric twinax connectors are available for this type of application.



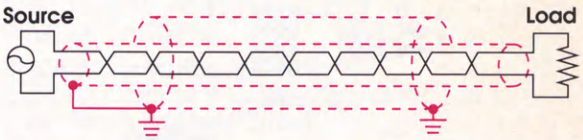

Guarded Twinax Cable System (one ground)

# Quadrax Guarded Circuit

Quadrax cable is twinax cable with two separate insulated braids connected to "system" ground and "earth" ground, respectively, and is the ultimate in flexible cable for **protected** and **guarded circuits.** Quadrax cable can also be used to provide additional noise and EMI suppression by connecting both shielding braids to a single earth ground if a separate equipment ground is not available. The inner braid (left floating above ground at all other locations) acts as a Faraday shield to provide additional circuit isolation. Coax cable with two extra insulated braids can be used in similar engineering designs for unbalanced systems.




Quadrax Guarded Circuit (#1)



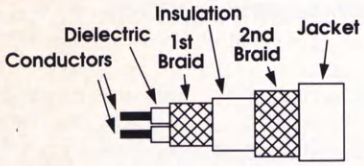

Quadrax Guarded Circuit (#2)

# Bonding and Grounding

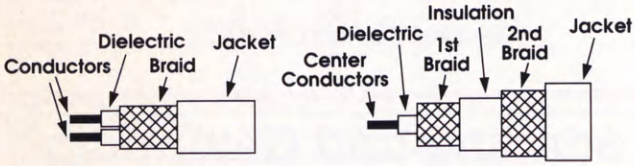
Good bonding and grounding are absolutely essential if noise pickup reduction is to be accomplished. Equipment isolation, cabling, bonding and grounding are all part of the noise pickup and EMI/RFI problem. The method of equipment interconnecting and grounding is a function of the signal frequency (LF, video or RF), and no one simple answer can be provided. The following common conditions require detailed consideration:

- **"Earth" grounds:** require extensive grids, ground rods, and chemical preparation to obtain an extremely low resistance and impedance system ground return.
- **Ground isolation:** In many instances in low-frequency data systems where equipment is widely separated, equipment ground "planes" should be isolated from earth grounds to avoid "noisy" ground loops caused by power and other equipment in the immediate area.
- **Parallel cabling:** Space isolate cabling of similar functions (i.e., RF from RF, video from video, and cables carrying vastly different voltage levels) so that they do not have mutual capacitive or inductive coupling.
- **Termination impedance:** Properly terminate all pulse and high-frequency cables in their characteristic impedance so that the cable reactive components are cancelled out and the voltage standing waves are reduced to a minimum.

- **Cable selection:** The higher the frequency, the faster the pulse rise time, or the longer the cable run; the bigger the cable required to reduce dielectric losses and lessen the distortion of pulse shapes.
- **Grounding location:** If "system" ground and "earth" ground must be connected, it should be done at minimal locations (preferably one) using extremely low-impedance bonding paths and materials. On the other hand, RF and high frequency bonding should be made quite frequently to provide the shortest RF path to ground and prevent the ground return from acting as an additional length of antenna.




Quadrax




Twinax Cable

Triax Cable

## Systems Usage

Most engineers are quite familiar with the long-time use of 75 ohm coax cable in IF and ***baseband telephone transmission*** installations and its universal use for ***broadcast*** and ***cable TV***. Coax and twinax cables are being used for ***local dedicated installations*** with the rapid growth of ***commercial computer data distribution***. The newer non-dedicated commercial coax bus systems (***Ethernet*** and ***Z Net***) tie many terminals to one high bit-rate trunk cable. ***Military aircraft systems*** are now being designed calling for 78 ohm twinax data bus distribution for main functions of ***guidance*** and ***control, navigation, communications***, etc., per MIL-STD-1553B. (TRS and TRB series connectors.) MIL-STD-1397 specifies 50 ohm triax in **naval ship digital data bus** applications which use the TRB and TRC series connectors listed in MIL-C-49142.

**Armor covering** should be applied over delicate cables when greater **mechanical protection** is required against vandalism, sabotage, rough handling, rodents, fire or other high risk conditions. Coax cable VSWR quickly deteriorates when the cable is repeatedly stepped on or bent beyond its tolerable radius of bend. ***Mines, prisons, open field use, sewers*** and ***engine compartments*** are just a few areas where armoring should be considered.

Interference is becoming a major problem with the proliferation of ***digital computer*** installations, ***data transmissions*** systems, and ***local area networks*** (both baseband and broadband). The main interference encountered is caused by the high harmonic content of the digital pulses that fall in the RF region and radiate into free space or cross talk to other victim cables. **FCC Docket 20780** mandates the reduction of this radiation for ***personal and business computers.*** This can be accomplished in part by shunting the unnecessary high harmonics to ground at the equipment locations before the signal gets into the transmission cable.

**Trompeter Electronics** has developed coax connectors that are isolated above ground but have a 6 nanofarad bypass capacitor, shunting the outer braid to ground for high harmonic attenuation. In many instances, interference will be so severe that twinax (balanced-shielded) or triax (shielded coax) cables will have to be used along with the proper connectors to provide good isolation, bonding and grounding.

As previously discussed, high bit-rate signals require high-frequency transmission cables (coax, twinax, triax and even quadrax) to minimize amplitude and frequency distortion and to prevent pick-up of noise from external interference. The design engineer must select the optimum cable and connectors for maximum reduction of interference due to radiated RF and magnetically coupled or direct contact ground loop noise. This can reduce the number of noise suppression filters and amplifiers required. A repeated word of caution is offered for those contemplating "digital" use. Low-voltage digital lines should not be placed in the near proximity of high-voltage and high current cables. Nor should a single multi-function connector be used due to the strong probability of cross-talk coupled interference. Physical separation of the cables is the first and best solution, with shielding and isolation above ground being the second consideration.

This paper is an edited version of an original paper written by Mr. Ed Trompeter. We have included it in our catalog to give the design engineer some insight into what may be done to produce noise-free systems without extensive re-work and debugging. However, it is our hope that **purchasing agents, material managers, technicians, salesmen** or anyone involved in the design, sales or installation of electronic systems wiring or cabling will also benefit from reading this paper. Copies of this paper may be made from this catalog and distributed for educational and training purposes without consent, but with credit given to Trompeter Electronics, Inc.

# CHOICE of CABLE TYPE and INSTALLATION

- **Grounded Coax:** Can pass the high information rates but is subject to ground loops as well as magnetic and radiated noise pickup.
- **Underground Coax:** Can pass the information rates but is subject to magnetic and radiated noise pickup. Substantially lowers the ground loop interference.
- **Triax Cable:** Can pass the high information rates but is subject to magnetic noise pickup. Substantially lowers the ground loop interference and removes the radiated noise.
- **Twinax Cable:** Passes only medium information rates but hinders the pickup of magnetic interference due to the "twist" of the signal pair. (Equipment usually operated with balanced inputs and outputs.)
- **Quadrax Cable:** Passes only medium information rates and hinders the pickup of magnetic interference due to the "twist" of the signal pair. Also gives additional radiated noise protection and allows the inner braid to be used for d.c. control voltages in some applications. (Equipment usually operated with balanced inputs and outputs.)
- **Underground versions of Twinax and Triax:** Provide even more ground loop isolation.

The choice of materials to be used in these cables is of major importance. For ***commercial installations in public buildings***, the National Electrical Code, Underwriters Lab and local ordinance requirements must be complied with. ***Fire wicking cables*** routed horizontally through fire walls and vertically floor-to-floor are required to be metal ducted (a very expensive and inflexible mode of construction). **Approved cables made of FEP** can be routed horizontally and vertically, without ducting, in air plenums with a great reduction in size and cost and with much **greater flexibility for future modifications.** Increasing insurance premiums will almost dictate that **flame retardant non-toxic materials** be used in all future public building cable installations to reduce potential loss of life and property. The same applies to **military aircraft cables** which must also be able to withstand exposure to fuel and cleaning solvents. Connectors are available for these special cables.

For **building installations** some mandatory reading is available from the following organizations:

**National Building Code**
American Insurance Association
85 John Street
New York, NY 10038

**Standard Building Code**
Southern Building Code Congress International
900 Montclair Road
Birmingham, AL 35213

**Uniform Building Code**
International Conference of Building Officials
5360 South Workman Mill Road
Whittier, CA 90601

**BOCA Basic Building Code**
Building Officials & Code Administration Int.
17926 South Halstead Street
Homewood, IL 60430

**National Electric Code**
National Fire Protection Assoc.
Batterymarch Park
Quincy, MA 02169
(617) 770-3000

**"UL" Publications**

**Underwriters Laboratories, Inc.**
1285 Walt Whitman Road
Melville, NY 11747
(516) 271-6200

**Underwriters Laboratories, Inc.**
333 Pfingsten Road
Northbrook, IL 60062
(312) 272-8800

**Underwriters Laboratories, Inc.**
1655 Scott Boulevard
Santa Clarita, CA 95050
(408) 485-2400

Other organizations to contact:

**International Association of Electrical Inspectors**

**National Electrical Contractors Association**

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Trompeter Electronics is continuously improving its products to meet industry's increasingly demanding needs. We reserve the right to change or alter specifications or materials without notice, provided the function and performance of the component remains reasonably the same or is improved. All products are subject to alteration or to discontinuance without prior notice.

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These represent 1000+ of over 7000 different Trompeter components. Call the factory for any Trompeter (TEI) part numbers not listed

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**Trompeter . . . "We connect you with quality"!**

Thank you for your interest in Trompeter Electronics' products. We're glad you took the time to request our new T18 catalog and hope it will prove to be a valuable resource for you.

***We'd like to ask a small favor of you . . .***

Would you please take a moment to fill out our survey card and drop it in the mail to us? It will help us to keep you informed through more effective advertising. Knowing which publications are most useful to you will also help us to keep up on vital issues which are important to you. Information on your application will help us to better understand your function and responsibilities.

You will also automatically be listed to receive our next catalog. Hopefully, this will all lead to better communication and products which are more responsive to your needs. Of course, answering all questions is optional but fully completed surveys will be entered into a quarterly drawing for a FREE Crimp Kit ($135 value!).

**Please keep me connected with quality.**

To assist you I have filled out your survey. Please contact me if I win a FREE Crimp Kit and be sure to send me your next catalog!

Name _____

Co. Name _____

Phone ( ) _____

Fax ( ) _____

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 92 THOUSAND OAKS, CA

POSTAGE WILL BE PAID BY ADDRESSEE

TROMPETER ELECTRONICS, INC.
31186 LA BAYA DR.
P.O. BOX 5069
WESTLAKE VILLAGE, CA 91362-4047

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WESTLAKE VILLAGE, CA 91362-4047

☐ I have an immediate application need. Please have a sales engineer call me! T18

Phone: _____ Best time to call _____ AM ☐ PM ☐

Specific application need: _____

☐ Literature Request Only: I do not have a copy of Trompeter's T18 catalog and I am requesting a personal copy.

☐ I have requirements for _____ additional catalogs for: (Please specify) _____

☐ Add me to your mailing list to receive your next catalog. _____

☐ Send me specific information on the following: _____

Name _____ Phone _____

My primary application is: ☐ Computer/Data ☐ Broadcast/Video ☐ Telecom ☐ Military

Other (Please specify) _____

My primary function is to: ☐ Recommend ☐ Specify ☐ Buy ☐ Use electronic components

Company Name _____

Address _____ MS/Dept _____

City _____ State _____ Zip _____

Trompeter Electronics, Inc. Phone (818) 707-2020 Fax (818) 706-1040

## *Trompeter Customer Connection Survey*

The three trade publications I read religiously are:

1. _____
2. _____
3. _____

I have seen your ads in trade publications ☐ Yes ☐ No

The number of different card pack advertisements I receive each month is: _____

The number of card packs I actually read is: _____

I have responded to ☐ 0-5, ☐ 6-10, ☐ 10-25, ☐ 25+ card pack ads in the past year

I have responded to ☐ 0-5, ☐ 6-10, ☐ 10-25, ☐ 25+ magazine ads in the past year

A volume of EEM is available to me:
☐ Yes ☐ No I use it: ☐ Rarely, ☐ Often, ☐ Never

A volume of The Thomas Register is available to me:
☐ Yes ☐ No I use it: ☐ Rarely, ☐ Often, ☐ Never

My major motivation for requesting a Trompeter catalog is:

☐ I have used Trompeter products for _____ years.

☐ I have not used Trompeter products and responded to advertising for general literature.

☐ I have not used Trompeter products and responded to advertising for a specific application need.

Comments: _____

Upon receiving Trompeter's catalog I found that it was:
- ☐ Useful as I had expected.
- ☐ Useful, but not what I expected.
- ☐ Not useful, but what I had expected.
- ☐ Not useful and not what I had expected.

Prior to receiving Trompeter's catalog I was:
- ☐ Familiar with Trompeter's name and products.
- ☐ Knew Trompeter's name but not its products.
- ☐ Did not know Trompeter or its products

My Dept.'s primary function is:
☐ Other (Please specify) _____

- Management ☐
- Purchasing ☐
- Engineering ☐
- Quality Control ☐

My primary job function is to: products

- Recommend ☐
- Specify ☐
- Buy ☐
- Use ☐

I've used Trompeter products for:
☐ I have never used Trompeter products before

- Less than 1 year ☐
- 1-3 years ☐
- 3-5 years ☐
- 5+ years ☐

My primary application is:

- Computer/Data ☐
- Broadcast/Video ☐
- Telecom ☐
- Military ☐

My company uses the following products:

- ☐ Coax cable
- ☐ Coax patching
- ☐ Coax connectors
- ☐ Cable Assemblies
- ☐ Twinax/Triax Cable
- ☐ Twinax/Triax patching
- ☐ Twinax/Triax connectors
- ☐ Custom Panels

☐ I have an immediate application need. Please have a sales engineer call me! T18

Phone: _____ Best time to call _____ AM ☐ PM ☐
Specific application need: _____

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Address _____ MS/Dept _____

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# Trompeter Electronics Foreign Sales Representatives' Offices

**AUSTRALIA**
Lynk Dynamics Pty Ltd
GPO BOX 1531
Adelaide 5001
PH: (61-8) 281-7566
FAX: (61-8) 281-7565

**CANADA**
Main Office
Promark Electronics
3524 Griffith St.
St. Laurent, PQ H4T 1A7
PH: (800) 361-2401
PH: (800) 363-8855
PH: (514) 733-5344
FAX: (514) 733-7140

**CANADA**
Branch Office
Promark Electronics
3069 Flanagan Court
Burlington, ON L7M 2L9
PH: (800) 363-8855
PH: (416) 332-1145
FAX: (416) 332-1145

**CANADA**
Main Office
Componetics, Ltd.
3540 Ashby Avenue
St. Laurent, PQ H4R 2C1
PH: (514) 331-9930
FAX: (514) 331-1498

**CANADA**
Branch Office
Componetics, Ltd.
210 Cochrane Dr. Unit #8
Markham, ON L3R 8E6
PH: (416) 479-7200
FAX: (416) 479-9609

**CHILE**
TASCO
Europa 1969
Santiago
PH: (562) 251-2288
FAX: (562) 251-2288

**CENTRAL & S. AMERICA**
Gendra Intl., Inc.
P.O. Box 371067
Miami, FL 33137
PH: (305) 372-8845

**COLUMBIA**
INSTELEC LTDA
Transversal 93 No. 61-02 Int. 81
Bogota
PH: (571) 252-1421
FAX: (571) 224-3977

**GERMANY**
Technitron Systems Division
Charles-de-Gaulle-Strasse 4
D-8000 Munchen 83
PH: (49-89) 67-80-95
FAX: (49-89) 637-65-66

**GREAT BRITAIN**
ACAL Electronics Ltd.-
Cossmic Technitron
Redfields Park, Church Crookham
Fleet, Hamshire GU13 ORD
PH: (44-252) 851-188
FAX: (44-252) 851-471

**GREAT BRITAIN**
ACAL Electronics Ltd.-
Dean Technitron
Redfields Park, Church Crookham
Fleet, Hamshire GU13 ORD
PH: (44-252) 851-100
FAX: (44-252) 841-488

**GREAT BRITAIN**
Greenwood Electronics
6 Weighbridge Row, Cardiff Road
Reading, Berkshire RG1 8LX
PH: (44-734) 595-843
FAX: (44-734) 505-324

**GREAT BRITAIN**
Lee Engineering, Ltd.
3 Eversley Way, Sky Business Park
Egham, Surrey TW20 8RF
PH: (44-784) 711-66
FAX: (44-784) 711-60

**FRANCE**
ACAL AURIEMA SA-
Technitron Systems
Z.A. des Marais, 1 Av Louison
Bobet
94120 Fontenay-Sous-Bois
PH: (33-1) 48-76-11-0
FAX: (33-1) 48-77-62-3

**HONG KONG**
DICO Intl., Inc.
Room 26, 7/F, Block B,
Proficient Ind. Centre
6 Wang Kwun Rd., Kowloon Bay
PH: (852) 799-9339
FAX: (852) 799-9182

**INDIA**
Accutrol Sys. Private, Ltd.
Post Box 11604
Bombay 400 021
PH: (91-22) 20-220
FAX: (91-22) 20-29-403

**ISRAEL**
Shaham Electronics
3 Taas St., P.O. Box 1824
Ramat-Gan 52521
PH: (972-3) 751-1187
FAX: (972-3) 751-5221

**ITALY**
Brelco S.r.l.
Via S. Maria delle Selve, 4
20046 Biassono, Milan
PH: (39-02) 494280
FAX: (39-02) 490280

**ITALY**
Technitron S.r.l.
Viale Milanofiori. Pal. E/2
20090 Asago, Milan
PH: (39-2) 82-42-112
FAX: (39-2) 82-45-050

**JAPAN**
YAMADA
P.O. Box 120
Akasaka 170
PH: (81-3) 475-1121
FAX: (81-3) 479-1789

**JAPAN**
Techno House Inc.
Shintomi Bld. 7F
2-5-10 Shintomi
Chuo-Ku Tokyo
PH: (81-3) 3553-8061
FAX: (81-3) 3555-8064

**KOREA**
Woo Seung Intn'l, Inc.
Room 303, Woojeon Bldg. #1021-1
Daechi-Dong, Kangnam-Ku
Seoul
PH: (82-02) 567-0928
FAX: (82-02) 552-0979

**MEXICO**
Teknomerica S.A.de C.V.
Romulo O'Farril Sr. #535
Col. Las Aguilas 01720
PH: (905) 680-4399
FAX: (905) 680-0984

**NETHERLANDS**
Technitron Systems B.V.
Zwarteweg 110
1431 wM Aalsmeer
PH: (31) 2977-22456
FAX: (31) 2977-40968

**NEW ZEALAND**
Connector Systems Ltd.
P.O. Box 6300
Auckland
PH: (64-9) 774-945
FAX: (64-9) 391-882

**NORWAY**
Main Office
ACAL Technitron A/S
Molendalev 6, P.O. Box 3185
ARSTAD
N5029, Bergen
PH: (47) 520-1940
FAX: (47) 529-1946

**NORWAY**
Branch Office
ACAL Technitron A/S
P.O. Box 631
3501 Honefoss
PH: (47-67) 33-090
FAX: (47-67) 33-091

**R.O.C.**
Tai Full Technologies Corp.
8th Floor, No. 96, Kuang Fu N. Rd.
Taipei, Taiwan
PH: (886-02) 731-0842
FAX: (886-02) 771-8664

**SINGAPORE**
Precision Component & Eqpmnt.
PTE Ltd.
211 Henderson Rd. #13-02
Henderson Industrial Park, 0315
PH: (65) 273-4573
FAX: (65) 273-8898

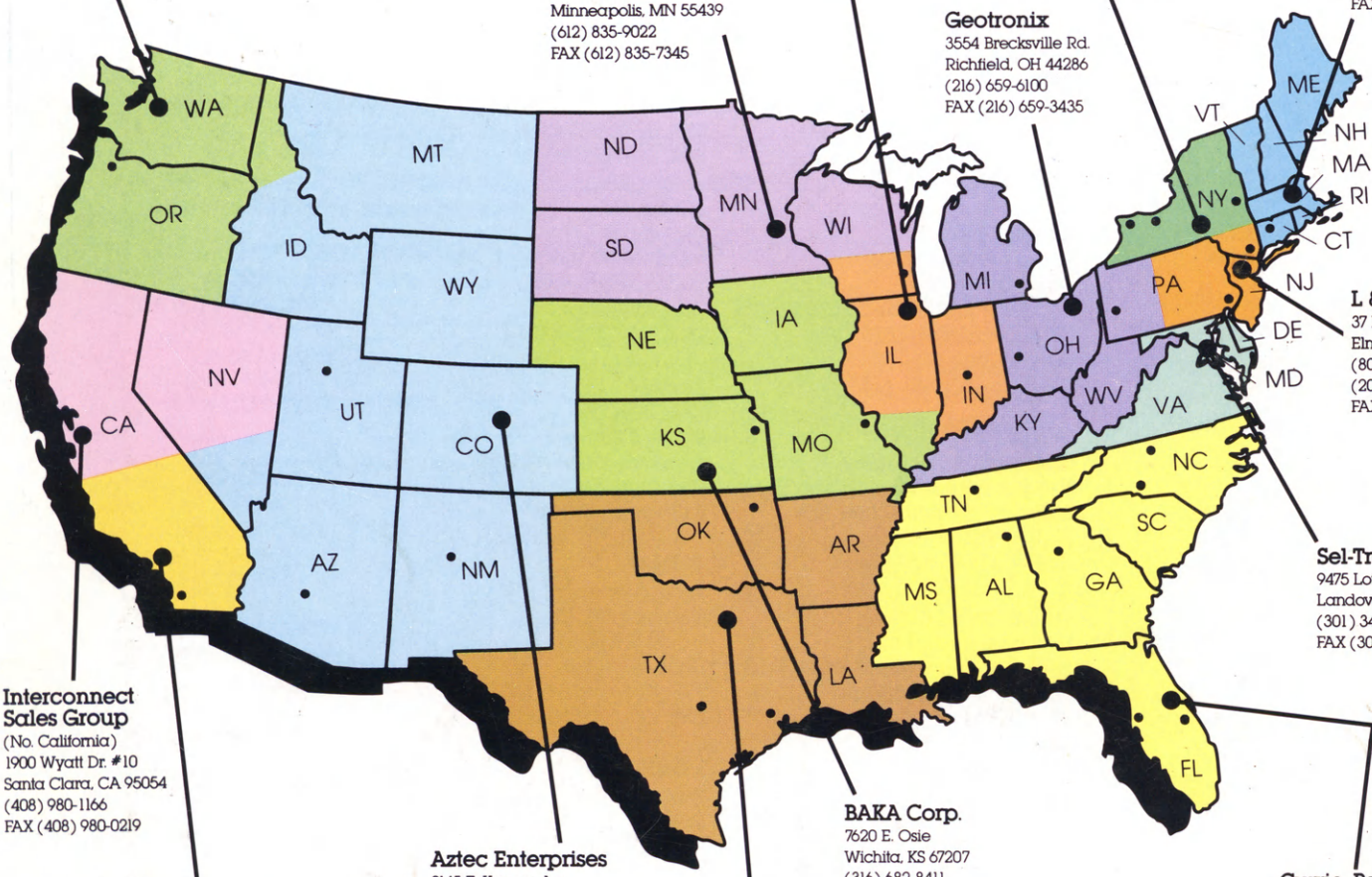
**SPAIN**
SCP S.A.
c/Marques De Monteagudo
28028 Madrid
24-4 Izda
PH: 245-60-05
FAX: 246-95-25

**SWEDEN**
ACAL Auriema AB Technitron
Systems Div.
Johannesfredsvagen 9A
S-161 31 Bromma
PH: (46-8) 25-27-50
FAX: (46-8) 80-69-38

**SWITZERLAND**
Z & B Video A.G.
Althardstrasse 190
CH-8105 Regensdorf
PH: (41) 1840-4588
FAX: (41) 1840-4575

# Trompeter Electronics U.S. Sales Representatives Main Offices

For branch offices see last page.




**Evergreen Marketing Group**
19102 N. Creek Pkwy., Suite 105
Bothell, WA 98011
(206) 485-8063
FAX (206) 485-4888

**EPA**
7336 Ohms Lane
Minneapolis, MN 55439
(612) 835-9022
FAX (612) 835-7345

**Berndt Associates, Inc.**
3115-P North Wilke Rd.
Arlington Hts., IL 60004
(708) 632-0900
FAX (708) 632-0993

**Geotronix**
3554 Brecksville Rd.
Richfield, OH 44286
(216) 659-6100
FAX (216) 659-3435

**TAE REP Inc.**
Corner Main & Collins St.
P.O. Box 247
Whitney Point, NY 13862
(607) 692-3705
FAX (607) 692-3709

**Underwood Sales**
694 Chelmsford St.
Lowell, MA 01851
(508) 256-8191
FAX (508) 454-0363

**L & M Associates**
37 Midland Ave.
Elmwood Park, NJ 07407
(800) 722-0441
(201) 797-0441
FAX (201) 797-9504

**Sel-Tronics, Inc.**
9475 Lottsford Rd.
Landover, MD 20785
(301) 341-2700
FAX (301) 341-3601

**Interconnect Sales Group**
(No. California)
1900 Wyatt Dr. #10
Santa Clara, CA 95054
(408) 980-1166
FAX (408) 980-0219

**Knight Company**
(So. California)
6733 S. Sepulveda Bl., Suite 210
Los Angeles, CA 90045
(213) 670-2833
FAX (213) 670-3063

**Aztec Enterprises**
9145 E. Kenyon Ave.
Suite 101
Denver, Colorado 80237
(303) 779-5285
FAX (303) 779-3305

**ION Associates**
1504 109th St.
Grand Prairie, TX 75050
(214) 647-8225
FAX (214) 641-9839

**BAKA Corp.**
7620 E. Osie
Wichita, KS 67207
(316) 682-8411
FAX (316) 682-2166

**Currie, Peak & Frazier**
7335 Lake Ellenor Dr.
Orlando, FL 32809-6219
(407) 855-0843
FAX (407) 851-1464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31186 La Baya Drive • P.O. Box 5069, Westlake Village, CA 91362-4047 • (818) 707-2020, Fax (818) 706-1040


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